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Baltimore Metro: Two years old and growing

November 1985

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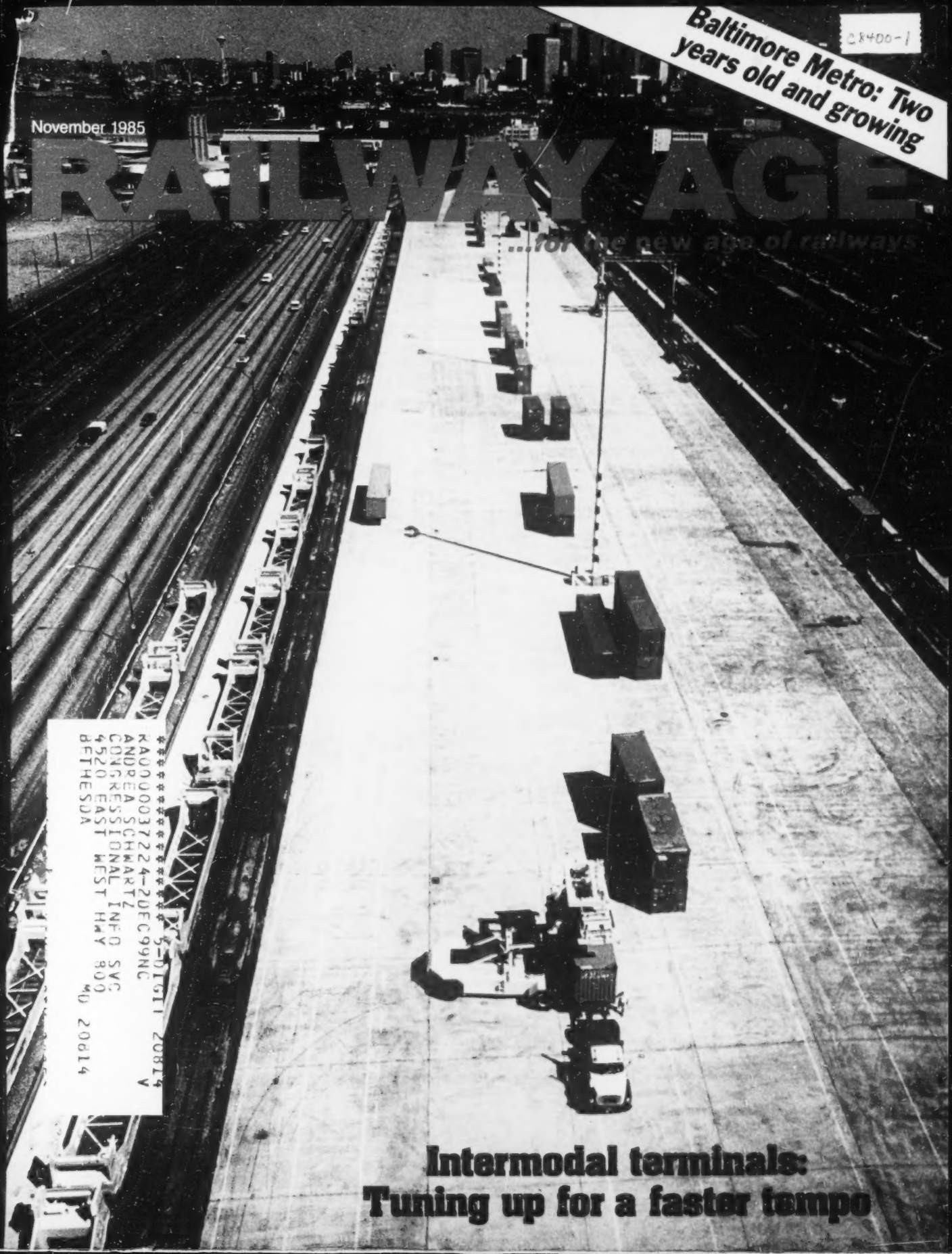

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ANDREA SCHWARTZ
CONGRESSIONAL INFO SVC
4520 EAST WEST HWY 800
BETHESDA MD 20814

Intermodal terminals: Tuning up for a faster tempo

RAILWAY AGE

...for the new age of railways

November 1985

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34 Vehicle ID: The search ranges far and near

As part of a broader quest for an Automatic Train Control System, railroads are testing ID systems ranging from faraway satellites to nearby electronic devices.

42 Intermodal terminals: The tempo quickens

Terminals don't hold answers to all the questions plaguing intermodal carriers in a time of rapid change, but there's rising recognition of their importance.

49 Coal weather warning: "Keep it moving"

Railroads have found that the best way to keep coal from freezing is to move it fast. But anti-freeze chemicals and thawing sheds still have a role to play.

55 End of the road for firemen?

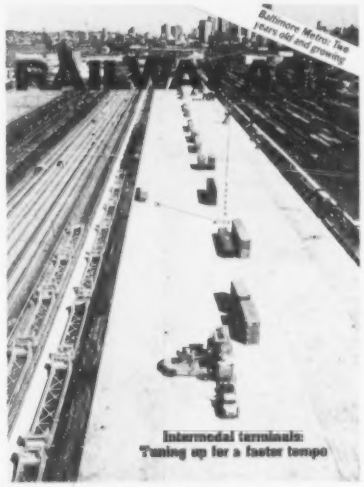
The fireman-off dispute is older than many railroaders. Emergency Board No. 208 is not the first to try to bring it to an end. Will it be the last?

60 Baltimore Metro: Two, and growing

Maryland's MTA, pleased with the success of an initial eight-mile line in moving nearly 40,000 riders, is pushing six more miles to completion.

65 New Mexico studies corridor proposal

Consultants have recommended 90-to-100 mph electric multiple unit trains for the Albuquerque-Santa Fe corridor. Most of the track is already in place.



Cover photo: Burlington Northern's "Seattle International Gateway" intermodal facility.

67 France's TGV wows U.S. visitors

Delegations that visit the high-speed line at first find it hard to credit some of the claims they hear. But they're returning home as true believers.

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Market Outlook

Facilities

California Transportation Commission: Allocated $17.8 million to the Santa Clara County Transit District for work on the Guadalupe Corridor Light Rail System; $1.768 million to the Sacramento Transit Development Agency for work on the Sacramento Light Rail System; $2.1 million to the Bay Area Rapid Transit District for modification of automatic track control circuits to permit closer operating headways of BART trains; and $295,000 for renovation of the San Luis Obispo Amtrak station.

Long Island: Ordered 19 Scheidt & Bachmann ticket vending machines at a cost of $810,000. The order was placed with Danelco Industries, Ltd., of British Columbia, the West German manufacturer's North American representative. The machines will issue weekly commutation tickets in addition to one-way tickets. Ten will be installed in Penn Station in New York City, two each at Jamaica, Mineola and Hicksville, and one at Woodside. Two will be used to train service employees. The San Diego light rail system has ordered similar machines for delivery this fall.

PAT (Pittsburgh): Awarded five contracts for nearly $1.8 million worth of construction and restoration work on the South Hills LRT and Drake trolley lines. The largest contract, for $1,118,909, went to Nello Construction Co. of Carnegie for general construction of the South Hills Junction Station.

Pandrol: Will begin production of lock spikes at its Bridgeport, N.J., plant during the first quarter of 1986.

Equipment

Chessie System: Awarded an issue of $22.8 million of equipment trust certificates to Merrill Lynch Capital Markets at a net interest cost of 10.3866%. The trust will finance the cost of 20 3,600-hp SD-50 locomotives to be built by the Electro-Motive Division of General Motors.

Chevron USA: Plans to acquire tank cars valued at $16 million in 1986. Chevron, whose owned/leased ratio is now 56/44, plans to increase this to 75/25.

Revenue freight carloadings

Commodity	Oct. 5 week	Sept. 28 week	Sept. 21 week	Sept. 14 week
Grain	21,090	20,228	19,306	19,859
Other farm products	3,691	3,447	3,355	3,232
Metallic ores	10,745	12,655	13,525	12,625
Coal	117,952	118,309	120,741	122,121
Crushed stone, gravel and sand	13,601	13,654	13,968	13,695
Nonmetallic minerals	12,764	12,140	13,268	12,055
Grain mill products	10,936	10,663	10,713	10,788
Food and kindred products	11,280	11,696	11,306	11,358
Primary forest products	10,596	10,998	11,204	11,059
Lumber and wood products except furniture	6,863	7,610	7,246	6,984
Pulp, paper and allied products	14,096	14,003	13,289	13,479
Chemicals and allied products	24,909	24,921	24,433	25,393
Petroleum products	4,703	4,850	4,991	5,093
Stone, clay and glass products	10,514	10,978	11,245	11,204
Coke	4,732	4,314	4,604	4,496
Metals and products	8,863	8,833	8,426	8,609
Motor vehicles and equipment	23,026	22,601	21,341	21,585
Waste and scrap materials	9,007	9,251	9,195	9,386
Forwarder and shipper assn. traffic	7,048	6,902	7,075	6,928
All other carloads	66,444	66,141	63,529	61,714
LCL traffic	161	154	171	181
Total Cars Loaded	**393,021**	**394,348**	**392,931**	**391,844**
% change from previous year	(1.1)	(7.5)	(8.3)	(8.0)
Estimated revenue ton-miles (billions)	18.0	17.4	17.3	17.2
% change from previous year	(1.3)	(7.0)	(9.5)	(9.2)

Cumulative Total:	**1985**	**1984**	**% change**
40 weeks	680.1	718.1 (rev.)	(5.3)

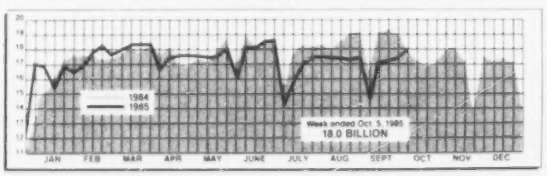
Piggyback loadings

	Sept. 28 week	Sept. 21 week	Sept. 14 week	Sept. 7 week
Trailers/containers	95,849	96,291	94,664	79,119

Cumulative total, 39 weeks		**% change from 1984**
Trailers/containers	3,355,216	(1.9)

Rail freight traffic trends

Billion ton miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	September 1985	9 months 1985	9 months 1984	September 1985	9 months 1985	9 months 1984	Oct. 1, 1985	Average Backlog 1985	Average Backlog 1984
Built new by carbuilders	1,020	8,666	9,080	153	6,855	12,356	2,583	3,875	6,289
Built new in RR shops	0	406	0	0	0	250	0	31	111
Built new—total	**1,020**	**9,072**	**9,080**	**153**	**6,855**	**12,606**	**2,583**	**3,906**	**6,400**
Rebuilt	0	0	0	0	0	0	0	0	0
TOTAL	**1,020**	**9,072**	**9,080**	**153**	**6,855**	**12,606**	**2,583**	**3,906**	**6,400**
Locomotives (new and rebuilt)	75	448	365	N/A	N/A	N/A	162	249	170

Source: Transportation Div., AAR and American Railway Car Institute

Lines on Labor

UTU and BLE: Feuding and fussing

David and Goliath are at it again, with the Brotherhood of Locomotive Engineers in the role of the little fellow and the United Transportation Union playing the big guy. And if this seems a strange time for the two operating organizations to be squaring off, what with the railroads trying hard to improve operating efficiencies, well, so be it. There's nothing really new, at any time, about the two Cleveland-based unions getting into a backyard brawl, with appropriate rhetorical escalation.

GUS WELTY

It all started peacefully enough. UTU proposed a merger of the two organizations, one in which the BLE would have full autonomy (*RA*, May, p. 27). To nobody's particular surprise, the BLE didn't go for the idea. Instead, it came up with its own proposal, which it presented to the UTU in mid-September and then to the world with a Washington press briefing in mid-October.

It was, at the very least, an exercise in one-upmanship. UTU had merely proposed a merger. BLE's counter was a proposal which, carried to its ultimate, would result in the elimination of the UTU. Or as one observer observed, "Well, that's one way to end a rivalry."

The Engineers' so-called "Lake Erie Plan" was in three parts, covering manning of "new business" trains, supplying of engineers and cab design maintenance.

At the outset, it should be noted that "new business" can be tricky of definition. In any event, such trains would be manned by an engineer and a co-engineer. Rates of pay would range from 175% of present rates for 100-mile-or-less trips to 160% for runs in the 301-to-400-mile bracket, and the dual basis of pay would continue in use. Co-engineers would come on at an 80% entry rate, reaching 100% in their third year. Duplicate time arbitraries except for terminal delay would be eliminated, but the grace period on initial terminal delay would be reduced sharply. As a means of reducing terminal delays, railroads would be allowed to establish "instruction crews" for outbound road-train make-ready or to handle inbound trains.

Under the BLE plan, co-engineers would be fully qualified engineers recruited from the ranks of present on-train employees. But when that source of supply is exhausted, a new source would be developed from the ranks of machinists and or electricians.

In its sales effort to the railroads, the BLE tried to emphasize how the plan would make the industry more competitive and at the same time produce savings described in various contexts as "tremendous" and "monumental." In its sales effort to the UTU, the BLE added the warning that "In the next four or five years, the railroad industry will have every through freight train manned by two people. Labor can either cooperate and get something for it or have it forced upon them for nothing."

Goliath never saw a Trojan Horse, of course, but UTU reacted as if the BLE had planted such a beast on the front steps. UTU called the plan "an absurdity." Its reponse also included such words as "rape," "coup," "sell-out."

The BLE letter to the UTU began with a harsh criticism of the recently-negotiated UTU-railroad agreements. The BLE charged that what UTU bargainers had agreed to would have caused massive layoffs and sharp reductions in employee wages; the UTU responded by declaring that it saw job gains and that it found the wage-cut estimate "absurd."

After the brawl is over...

On the positive side, both labor organizations say they want to help the industry become more competitive.

But the BLE's sweeping claims about labor-cost reductions don't really stand up, not with the proposed higher wage rates and reduced hours, not with the suggested employment of "instruction crews," and not in view of the number of reduced-crew agreements that are already in place.

And besides, hold on just a minute. With the exception of the proposed wage-rate increases and the proposed reduction in hours-per-month, everything else that the BLE is pushing would seem to require negotiation with an agreement by the UTU.

Without much doubt, this latest exchange between the two operating unions will make management negotiators' jobs more difficult than they already are. Worse, it could make it harder than ever to get the competitive strengthening which all concerned agree is needed.

Class 1 railroad employment

Employee Group	No. of employees, mid-month count August 1985	Percent of change August 1985 from August 1984	Percent of change August 1985 from July 1985
Total—all employees	305,326	d 8.37	d .13
Executives, officials and staff assistants	13,637	d 2.57	d .47
Professional and administrative	56,707	d 7.81	d .77
Maintenance of way and structures	67,178	d 7.28	1.02
Maintenance of equipment and stores	55,147	d 11.06	d .18
Transportation (other than train and engine)	19,658	d 15.85	d 1.78
Transportation (train and engine)	92,999	d 6.90	.76

Source: ICC

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WMATA: 60 miles and growing fast

December 1985

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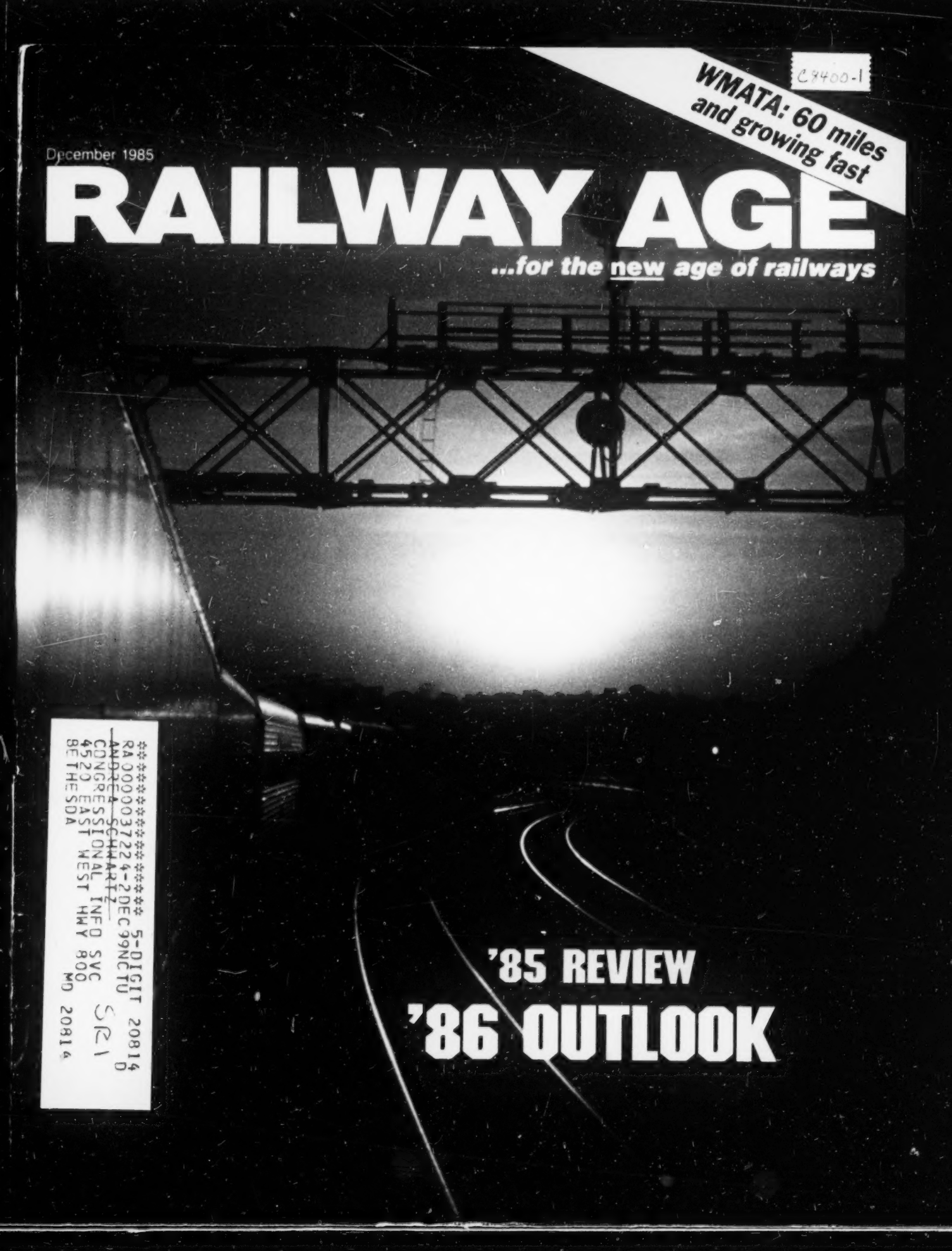

'85 REVIEW

'86 OUTLOOK

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CONGRESSIONAL INFO SVC
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December 1985

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35 '86 Outlook: Where is the business?

With few signs of a turnaround now evident, railroads will be under increasing pressure to find new ways to control costs—no easy task in a field already well harvested.

38 '85 Review: From boom to blah

Early hopes for repeating '84's bright performance were not realized as far as traffic and earnings were concerned. But there was solid progress on other fronts.

45 Angus makes a U-turn

Industrial engineering played a big role in the modernization of CP Rail's 80-year-old locomotive shop, where a U-shaped production line has boosted productivity.

51 Contract locomotive repair facilities

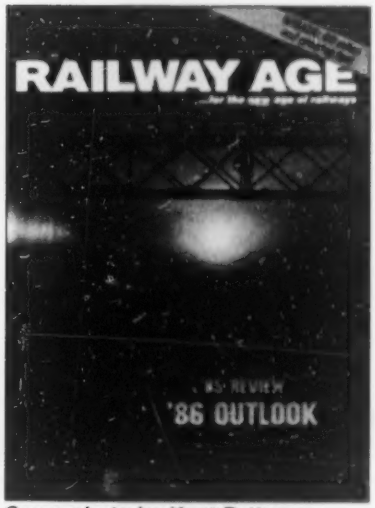
Railway Age's fifth annual directory lists U.S. and Canadian shops, by state or province and by company, and describes the services they perform.

60 Canadian roads push for parity

CN and CP say that in order to stay competitive, they need some of the same freedoms U.S. roads now enjoy. "Freedom to Move" legislation may be the answer.

65 Metro magic in Washington

Metrorail has written a dazzling success story with a 60-mile system. Now it's campaigning for the funds needed to go the full 103 miles originally planned.



Cover photo by Kent Patterson.

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26 Maas moves up at Grand Trunk
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30 Pan Am Congress to meet in Cuba
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63 NJ Transit trains add 5,600 riders

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Market Outlook

Equipment

Jacksonville Electric Authority: Ordered 200 aluminum-steel BethGon Coalporters from Bethlehem Steel for delivery beginning in the second quarter of 1986 (see p. 32).

Orlando Utilities: Will acquire approximately 200 aluminum-steel coal hopper cars from Bethlehem Steel's Freight Car Division (see p. 32).

Urban Transportation Development Corp.: Has licensed Material y Construcciones, S.A. (MACOSA) to market the Advanced Light Rapid Transit System (ALRT) in Spain, Portugal, Tunisia, Libya, Egypt, Morocco, and Algeria. MACOSA already builds a wide range of cars in Barcelona, Valencia and San Juan and is building a fourth facility in Albuixech, Spain.

Facilities

Chicago & North Western: Completed a $10-million upgrading of its line between West Chicago and Belvidere, Ill., permitting train speeds to be increased from an average of 10 mph to up to 40 mph over a 50-mile stretch of track.

CP Rail: Awarded a contract to Dominion Bridge of Calgary to build a through-plate girder bridge over the Blaeberry River west of Golden, B.C., part of a double-tracking project on which CP is spending $19 million (Canadian) this year.

Metro-North: Awarded a $600,000 contract to Times Fiber Communications, Inc., of Wallingford, Conn., for the supply of 75 miles of optical fiber cable (see p. 63).

Union Tank Car. Co.: Will build a 50,000-square-foot railcar maintenance and repair shop at Valdosta, Ga., on an 85-acre site served by Norfolk Southern and Seaboard. The shop, to be completed by mid-1986, will have car cleaning, blasting and painting, and waste treatment facilities. Annual capacity will be about 2,500 cars. Union Tank Car has ten other major shops and offers minor repairs at 14 additional locations.

Revenue freight carloadings

Commodity	Nov. 9 week	Nov. 2 week	Oct. 26 week	Oct. 19 week
Grain	32,322	33,713	26,494	24,922
Other farm products	5,021	4,614	4,204	4,184
Metallic ores	14,515	16,134	16,873	14,045
Coal	109,004	118,584	113,533	116,282
Crushed stone, gravel and sand	12,898	13,381	13,443	13,896
Nonmetallic minerals	11,334	10,656	9,842	11,774
Grain mill products	10,894	10,867	10,961	10,919
Food and kindred products	11,714	11,712	11,583	11,354
Primary forest products	11,194	10,561	11,208	11,298
Lumber and wood products except furniture	6,539	7,149	7,003	6,902
Pulp, paper and allied products	12,990	13,508	13,397	13,339
Chemicals and allied products	22,723	23,279	23,416	23,814
Petroleum products	4,797	4,467	4,521	4,697
Stone, clay and glass products	9,687	10,157	10,277	10,698
Coke	5,008	5,142	4,743	4,759
Metals and products	7,509	8,426	7,715	7,594
Motor vehicles and equipment	22,374	22,795	21,131	21,740
Waste and scrap materials	8,171	8,166	8,586	8,774
Forwarder and shipper assn. traffic	6,249	6,893	6,898	6,476
All other carloads	63,688	66,069	64,780	64,633
LCL traffic	221	167	180	163
Total Cars Loaded	**388,852**	**406,440**	**390,788**	**392,263**
% change from previous year	(0.1)	5.0	5.3	6.0
Estimated revenue ton-miles (billions)	18.1	18.8	17.9	18.0
% change from previous year	(1.3)	3.4	3.2	4.9

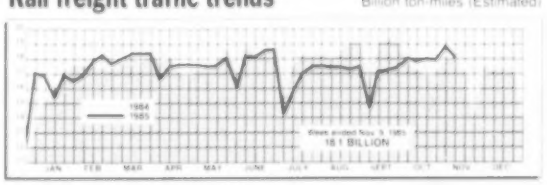
Cumulative Total:	1985	1984	% change
45 weeks	770,7	806,7	(4.5)

Piggyback loadings

	Nov. 2 week	Oct. 26 week	Oct. 19 week	Oct. 12 week	Oct. 5 week
Trailers containers	95,391	94,235	91,703	94,388	96,498

Cumulative total, 44 weeks		% change from 1984
Trailers containers	3,827,431	(1.7)

Rail freight traffic trends



Source: Association of American Railroads

Freight cars

	DELIVERED October 1985	DELIVERED 10 months 1985	DELIVERED 10 months 1984	ORDERED October 1985	ORDERED 10 months 1985	ORDERED 10 months 1984	ON ORDER AND UNDELIVERED Nov. 1, 1985	Average Backlog 1985	Average Backlog 1984
Built new by carbuilders	1,169	9,835	10,375	980	7,835	13,778	2,394	3,727	6,209
Built new in RR shops	0	406	0	0	0	406	0	28	141
Built new—total	**1,169**	**10,241**	**10,375**	**980**	**7,835**	**14,184**	**2,394**	**3,755**	**6,350**
Rebuilt	0	0	0	0	0	0	0	0	0
TOTAL	**1,169**	**10,241**	**10,375**	**980**	**7,835**	**14,184**	**2,394**	**3,755**	**6,350**
Locomotives (new and rebuilt)	69	517	400	N/A	N/A	N/A	114	236	172

Source: Transportation Div., AAR and American Railway Car Institute

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Rail Transit review and outlook

January 1986

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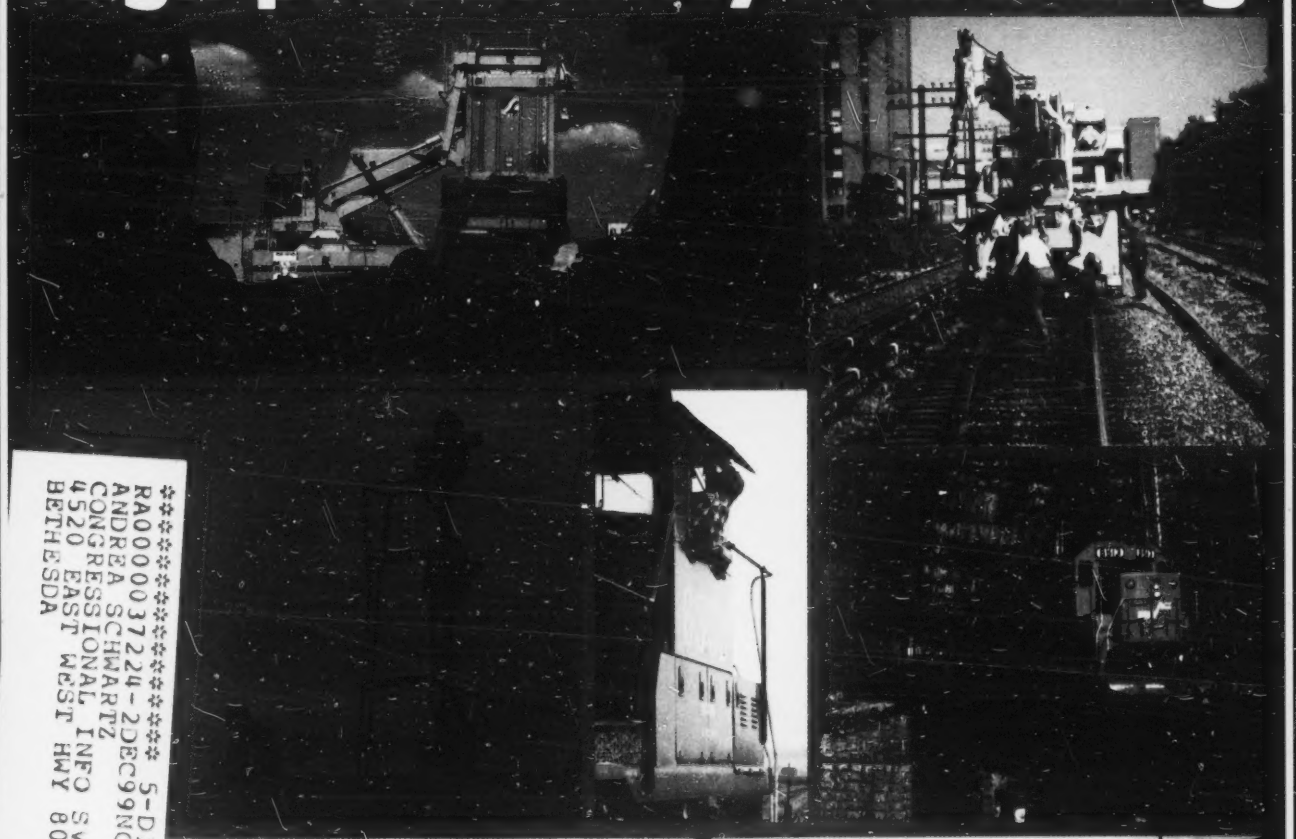
High-productivity railroading



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January 1986

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Railroads have made enormous productivity gains—but to survive in a swiftly changing competitive marketplace, they must make their capital and labor dollars work harder.

36 CSX: A bold new course

A radical new approach to operating a rail-based transportation company is contemplated in a sweeping reorganization that CSX hopes to complete within the next three months.

39 For UP, total car control

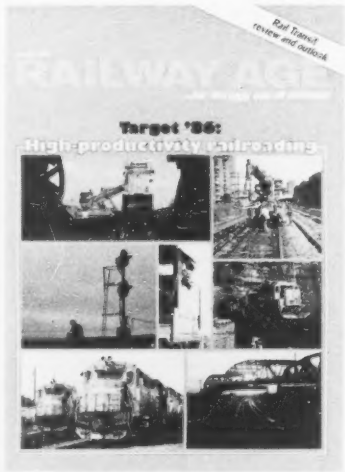
The Transportation Control System that worked so well on MoPac is now working equally well on the UP System, giving the company control of the entire freight car work cycle.

46 *Transit review and outlook:* A growth industry confounds its critics

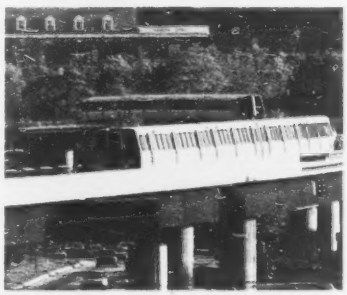
From coast to coast, and from border to border, new rail-transit projects are proving the doomsayers wrong as they win new riders and help stimulate local economic development.

51 NECIP: A monster tamed

The fits and false starts of the early years of the Northeast Corridor Improvement Project are just a bad memory as NECIP, nearing completion, starts to deliver on its promises.



Photos by Kent Patterson except for Seaboard (Thomas R. Schultz) and rails at sunset (Robert G.Lewis).



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Market Outlook

Equipment

Amtrak: Will assemble 50 material handling cars at its Beech Grove, Ind., shops, using 60-foot boxcar bodies supplied by Thrall Car.

CN Rail: Plans to acquire 20 new locomotives and 940 freight cars in 1986 as part of a capital investment program estimated at $470 million (Canadian), down from the $627 million budgeted for 1985.

CP Rail: Will acquire 50 2,000-hp diesel-electric units as part of its 1986 capital program. Other major capital projects will include continuing tunnel construction in western Canada and completion of etc installation between Winnipeg and Thunder Bay. CP says its 1986 capital spending will be "somewhat below" 1985's $600 million (Canadian) due to a flat traffic outlook and the anticipated impact on revenues of deregulation.

Conrail: Ordered 22 3,900-hp C39-8 diesel-electric units from General Electric at a cost of more than $28 million. The six-axle, microprocessor-controlled locomotives, which will be the most powerful in the Conrail fleet, are scheduled for delivery in mid-1986.

GO Transit: Plans to order 8 to 17 commuter-service diesel-electric locomotives in 1986.

Massachusetts Bay Transportation Authority: Will place orders in 1986 for eight diesel-electric locomotives.

Union Pacific System: Ordered 60 3,800-hp SD60 diesel-electric units from the Electro-Motive Division of General Motors at a cost of $75 million. They will be the first microprocessor-equipped locomotives on the UP System.

Facilities

Massachusetts Bay Transportation Authority: General Railway Signal is the apparent low bidder, at $4.2 milion, on a contract for signaling MBTA's 8½-mile Needham Branch extension. Work is to be completed in June 1987.

Revenue freight carloadings

Commodity	Dec. 7 week	Nov. 30 week	Nov. 23 week	Nov. 16 week
Grain	23,997	20,876	29,302	31,088
Other farm products	4,549	3,636	3,976	4,658
Metallic ores	11,847	12,527	14,898	15,044
Coal	107,891	89,615	119,830	110,523
Crushed stone, gravel and sand	10,915	8,334	12,393	12,870
Nonmetallic minerals	11,006	6,958	10,904	10,422
Grain mill products	10,787	8,424	10,358	10,422
Food and kindred products	11,229	8,567	11,443	10,960
Primary forest products	11,120	7,327	11,373	11,702
Lumber and wood products except furniture	6,213	5,101	7,013	6,701
Pulp, paper and allied products	13,895	12,250	12,808	12,921
Chemicals and allied products	24,131	18,992	23,400	23,114
Petroleum products	4,749	3,418	4,518	4,446
Stone, clay and glass products	9,146	7,264	9,368	9,998
Coke	5,099	4,220	5,190	5,015
Metals and products	7,844	7,324	8,471	8,299
Motor vehicles and equipment	22,595	16,307	23,005	22,681
Waste and scrap materials	7,531	5,592	8,076	8,055
Forwarder and shipper assn. traffic	6,208	5,312	6,476	6,567
All other carloads	60,252	47,713	63,516	62,087
LCL traffic	132	136	265	188
Total Cars Loaded	**371,136**	**299,893**	**396,583**	**387,761**
% change from previous year	(2.1)	(22.8)	32.1	2.7
Estimated revenue ton-miles (billions)	17.1	14.0	18.2	17.9
% change from previous year	(2.7)	(22.1)	27.5	2.0

Cumulative Total:	**1985**	**1984**	**% change**
49 weeks	836,1	874,1	(4.4)

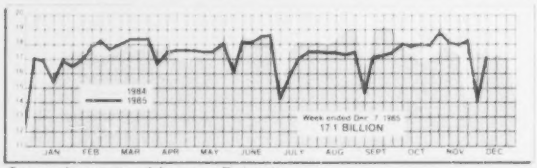
Piggyback loadings

	Nov. 30 week	Nov. 23 week	Nov. 16 week	Nov. 9 week
Trailers/containers	70,689	92,070	91,493	92,871

Cumulative total, 48 weeks		**% change from 1984**
Trailers/containers	4,174,554	(1.4)

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	November	11 months		November	11 months		Dec. 1,	Average Backlog	
	1985	1985	1984	1985	1985	1984	1985	1985	1984
Built new by carbuilders	910	10,745	11,600	350	8,185	14,303	1,834	3,555	6,081
Built new in RR shops	0	406	0	0	0	406	0	25	164
Built new—total	**910**	**11,151**	**11,600**	**350**	**8,185**	**14,709**	**1,834**	**3,580**	**6,245**
Rebuilt	0	0	0	0	0	0	0	0	0
TOTAL	**910**	**11,151**	**11,600**	**350**	**8,185**	**14,709**	**1,834**	**3,580**	**6,245**
Locomotives (new and rebuilt)	50	567	460	N/A	N/A	N/A	75	221	172

Source: Transportation Div., AAR and American Railway Car Institute

Watching Washington

How tax reform would affect rails

Railroads lobbyists face a frenetically busy '86. Reregulation advocates are amassing a $1 million-plus war chest to renew a fight that got nowhere last year. There will be a strong push for a bill now in committee that would apply new antitrust standards to railroads, holding each railroad to be a monopoly if it owns the only rail facilities in a particular community and thus requiring it to share those facilites with other carriers (one pro-railroad Congressman is trying to blunt the thrust of that legislation by insisting that it also cover electric utilities). The battle over the disposal of Conrail will continue in an atmosphere further clouded by the late-1985 offer of $1.6 billion, by Allen & Co. and First Boston Corp., for the railroad (the two other contenders, Norfolk Southern and Morgan Stanley, each offered a base $1.2 billion). But the most critical watch in Washington will be on tax reform legislation.

The Tax Reform Act of 1985, which the President steamrollered through the House the week before Christmas, would cost the railroad industry an average of $733 million a year (over a six-year period) in new taxes—a far bigger bite than either the Treasury I or II proposals, which railroads thought were bad enough. The AAR arrived at this estimate by figuring the impact of the new law on a "composite major railroad" created by averaging the corporate financial reports of Burlington Northern, CSX, Norfolk Southern, Santa Fe Southern Pacific and Union Pacific for the years 1981-84. The averages were adjusted by inflation and other factors to produce estimated financial results for a large composite railroad for 1986-91. Under the bill that has now gone to the Senate, the composite railroad's tax would increase by an annual average of $124 million. By extrapolation, that would amount to a $4.4 billion increase for all railroads during the 1986-91 period.

President Reagan has said he hopes for major revisions in the law in the Senate. So do the railroads.

Average annual impact of tax proposals on the composite major railroad 1986-1991

($ in millions)

Item	Current Law	Ways & Means	Treasury II	Treasury I
Earnings Before Interest Depreciation and Taxes	2,432	2,432	2,432	2,432
Depreciation	1,065	782	952	640
Interest Expense	223	223	223	168
Dividend Expense	0	9	26	97
Excess Depreciation	0	0	97	0
Earnings Before Taxes	1,144	1,418	1,328	1,527
Tax (@ 46, 36, 33, and 33%, Respectively)	526	510	448	504
Capital Gains Tax	35	45	29	29
Investment Tax Credit	-130	0	0	0
Net Tax	431	555	477	533
Annual Tax Increase vs. Current Law		124	45	102

Note: Treasury II provides a tax rate of 39.5% per 1986. THis results in a six-year average of 33.7%.

Source: AAR

ADVERTISING SALES

Charles H. Ellwanger, Vice President-Sales

New York, New England, Quebec
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345 Hudson Street
New York, NY 10014
(212) 620-7200

Colorado, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North & South Dakota, Wisconsin
Glen A. Schlueter
29 E. Madison Street
Chicago, IL 60602
(312) 641-5815

Ohio, Western Pennsylvania, West Virginia, Western New York, Ontario
Nancy Giallonardo
500 Cedar Avenue
Pittsburgh, PA 15212
(412) 231-8168

New York, Mid-Atlantic, Southeast
Barbara Smith
345 Hudson Street
New York, NY 10014
(212) 620-7244

Southwest, Kansas City
Tony Halbert
3024 Sandage Street
Fort Worth, TX 76109
(817) 923-9832

Southern California, Arizona, Utah, Nevada, New Mexico
Fred Klaner, Jr.
3334 East Coast Highway
Suite 307
Corona del Mar, CA 92625
(714) 759-8421

Northern California, Northwest, Western Canada
Chris Vogler
3030 Bridgeway Building
Sausalito, CA 94965
(415) 332-6750

United Kingdom, Scandinavia, Spain, Portugal, and Netherlands
Kenneth J. Hendry, Derek Wood
West House
West Street
Faversham
Kent, ME13 7JB
Tel: 0795 531343
Telex: 96118 ANZEEC G

France, Belgium and French-speaking Switzerland
Gérard Lasfargues
32 Rue Desbordes-Valmore
75116 Paris, France
Tel: 45 04 97 94

Germany, Austria, Eastern Europe, and German-speaking Switzerland
Siegfried D. Kamper
Theodor-Heuss-Str. 4
6078 Neu-Isenburg
West Germany
Tel: 06102 8988
Telex: 4189036 KAEM D

Italy
F. Pecori Giraldi
Promark International
Via G. Frua 8
20146 Milan, Italy
Tel: 46 35 18

Japan
C.H. Yiu
S.G.S. International, Ltd.
Dormi Gotanda un Maison, Room 311
2-9-7 Nishi Gotanda, Shinagawa-ku
Tokyo 141, Japan
Cable: SGSINTERNAL TOKYO

Korea
O-Kyu Park
World Marketing, Inc.
CPO Box 4010
Seoul, Korea

South America
Marcos F. Pipan
Juramento 5274-2 A
1431 Buenos Aires, Argentina
Telex: 22612 TURBO AR

Southeast Asia
Timothy C. Herberlein
China Consultants International
Suite 905, Guardian House
32, Oi Kwan Road
Happy Valley, Hong Kong
Tel: 5-8332181
Telex: 75368 AMRHK HK

Lines on Labor

A crisis in communication?

Conventional wisdom has been proved wrong before—has it ever. But conventional wisdom today says that in the next round of management-labor negotiations, major carriers will opt out of national handling, preferring to go it alone in order to press their individual needs in bargaining. If that happens, there will be implications all over the lot, for the labor organizations and for rail management. And you have to wonder if all concerned have thought about all those implications—and complications.

GUS WELTY

Where labor and management may share a problem is in the area of communication.

Union communications, for the most part, are what the union president wants to communicate. Union publications, those coming out of headquarters, are professionally done, and they have a certain gut impact on issues that concern the whole membership all across the industry. UTU, BRAC and BLE publications seem especially well-done in this regard, and there are others. But union publications done on an individual-property basis are something else. Some do have a professional look and tone. But some also seem more designed to play up the accomplishments of the guy who has his finger on the button that starts the printing press.

At the very least, let's say that with individual bargaining, the grand lodge could have a problem in keeping up with what's going on and then in disseminating policy. Let's also say that local publications, the officers who put them out, could have a problem in knowing how to react to an aggressive management position and how to gauge reaction.

Individual railroads, on the other hand, have communications tools in place. Not many company publications are issued as often as they should be, and some don't have the staff resources that they might have.

But it should come as no surprise to any astute observer of company publications to hear that in the past few years most of those publications have improved tremendously in both appearance and content.

Railroad publications today have the look of class about them. More important, railroad publications today are tackling tough issues—the competitive factors, the need for increased productivity, the rationale behind alcohol and drug abuse programs and rules, that sort of hard stuff.

But a switch from national bargaining to individual-property bargaining might also bring a problem for management that its communicators would also have to tackle.

That's the problem of trust.

Under national-handling, negotiations are once-removed. It's an "industry" that individual employees know that their unions are dealing with.

Under local-bargaining, negotiations are right there. Employees on a given railroad know that this is the specific management group their representatives are dealing with.

Letters that come in to "Lines on Labor" from union members deal with a variety of perceived problems. There are objections to the raises and bonuses given top management people when railroads are poor-mouthing about wage increases for the rank-and-file. Those are the easy ones to answer, because in this day and age an excellent chief executive officer or chief operating officer probably is worth his weight in gold. But then there are the letters that cite chapter and verse on double-standards, on how union members and supervisors are treated if a union guy and a supervisor committed similar offenses and they aren't disciplined similarly. There are the letters alleging that low-level supervisors treated customers badly, cancelling switches and blaming high labor costs for it, thereby losing high-rated traffic, when high labor costs—again allegedly—aren't much of a factor. There are letters, and an occasional phone call, from people whose union jobs range from yardman to engineer to general chairman.

With a rare exception or two, these are not crank letters, crank calls.

These are communications from employees who want their railroad, their employer, to succeed. These are communications from people who care.

Union employees, too many times, say that they read or hear what top railroad management says and that they then see what lower-level management does—and that there isn't a whole lot of correlation between the two.

So, if it comes to individual bargaining, management's job isn't just in communicating more effectively with union folks. Management also must communicate better with its own.

Class 1 railroad employment

Employee Group	No. of employees, mid-month count September 1985	Percent of change September 1985 from September 1984	Percent of change September 1985 from August 1985
Total—all employees	299,256	d 9.79	d 1.99
Executives, officials and staff assistants	13,490	d 3.05	d 1.08
Professional and administrative	56,109	d 7.94	d 1.05
Maintenance of way and structures	64,057	d 10.55	d 4.65
Maintenance of equipment and stores	54,503	d 11.95	d 1.17
Transportation (other than train and engine)	19,598	d 15.23	d .31
Transportation (train and engine)	91,499	d 8.71	d 1.61

Source: ICC

Update

China picks GRS as a partner in Shanghai signaling venture

The People's Republic of China has been looking for a railway signaling company to set up shop in China. The General Railway Signal Co. of Rochester, N.Y., has been looking for new world markets. A few weeks ago, after nearly a year and a half of negotiations, the two got together and agreed to establish a joint venture to be known as CASCO Signal Ltd., which will have its headquarters and its first factory in Shanghai, where it will manufacture etc systems, classification yard controls, grade crossing warning devices, and hotbox detectors. GRS and CASCO's Chinese parent, the China Railway Signal and Communications Corp., will jointly invest an initial $4.8 million in the enterprise. The first products will be for installation on Chinese railways. Gradually CASCO hopes to get into the international export market.

The announcement of the joint venture agreement, which was made Dec. 10, climaxed a negotiating process that began in August 1984, with the China United Trading Corp. and the China Economic and Trade Consultants Corp. participating.

The Chinese principal in the agreement, China Railway Signal and Communications Corp., is the only railway signal company in the People's Republic. It has three engineering subsidiaries, ten factories, a research and design department, and employs more than 20,000 people.

GRS President Gerald Collins was jubilant over the agreement, noting that the Rochester-based company had won out in the Chinese negotiations in competition with signaling companies in Britain, France, West Germany, Sweden and Japan. He sees a big market in China, which now has some 31,000 route miles of railroad and expects to have 48,000 miles by the turn of the century. Until new factories in China go into operation, said Collins, some equipment will be supplied from Rochester. He is also optimistic for the development of an export market out of China. Rochester's own exports, he notes, have dwindled as the dollar has grown stronger.

Earnings slump along with traffic

A 5% decline in revenue ton-miles in last year's first three quarters translated into a 21.7% plunge in Class I railroad ordinary (net) income. Earnings for the period dropped from $2.166 billion in 1984 to $1.694 billion in 1985. The decline was nationwide: 23.2% in the West, 21.6% in the East, 18.8% in the South.

Operating revenues for the nine-month period went from $22.242 billion in 1984 to $20.863 billion last year, down 6.2%. Operating expenses were down only 4%, from $19.281 billion to $18.506 billion. The result was a 20.4% decline in net revenue from operations.

For the third quarter, Class I ordinary income was $765.4 million (down 15.5% from a year earlier) on operating revenues of $6.743 billion (down 8.3%). Third-quarter operating expenses, $5.914 billion, were down 6.1%.

For the 12 months ended last Sept. 30, the Class I rate of return on net investment was 4.63%—about ten percentage points below what the Interstate Commerce Commission has ruled to be a reasonable rate of return.

Class I Railroads in the United States

For the Third Quarter

	1985 (millions)	1984 (millions)
Operating Revenues	$6,743.4	$7,354.4
Operating Expenses	5,914.5	6,302.5
Net Revenue from Operations		
United States	828.9	1,051.9
Eastern District	255.6	325.3
Southern District	185.9	192.7
Western District	387.4	533.9
Ordinary Income		
United States	646.2	765.4
Eastern District	233.6	285.5
Southern District	112.0	141.3
Western District	300.5	338.6

For the First Nine Months

Operating Revenues	$20,862.6	$22,242.3
Operating Expenses	18,506.2	19,281.2
Net Revenue from Operations		
United States	$2,356.5	$2,961.1
Eastern District	737.4	907.4
Southern District	553.5	649.4
Western District	1,065.6	1,404.3
Ordinary Income		
United States	1,694.4	2,166.4
Eastern District	624.4	796.9
Southern District	353.6	435.9
Western District	716.4	933.6
Rate of Return on Net Investment (12 months ended Sept. 30 - preliminary)	4.63%	4.41%

Source: AAR

Thrall wins nod on RoadRailer

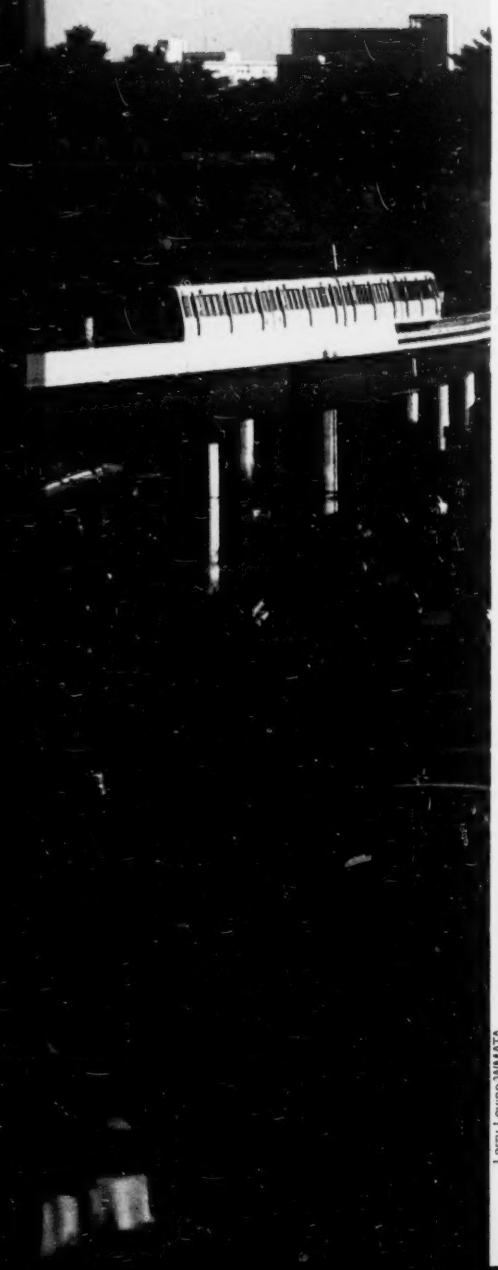
Thrall Car now has bankruptcy court approval of an agreement with North American Car and its creditors under which Thrall will purchase all of North American Car's stock interest in Bi-Modal Corp., developer of RoadRailer.

In a separate transaction, Thrall has also acquired the railcar product lines and patents of Maxson Corp., a manufacturer of such special equipment as depressed center flatcars.

Rail transit review and outlook

A growth industry

Don't believe what you hear about rail transit from the Reagan Administration: There's abundant and measurable evidence all across the land that it's working, and working very well.



Larry Levine/WMATA

As 1986 dawns across the continent, the impact of new rail transit projects on public transportation patterns is showing ever more clearly the great wisdom with which many of these projects were conceived. The doomsayers have meager evidence to support their dire predictions.

From Boston to San Diego and from Buffalo to Atlanta, the commuting public has become ever more enamored of and dependent upon the vast improvements taking place in the rail transit industry. Only the federal Administration seems oblivious to the obvious. On several occasions, Congress has had to chasten the Urban Mass Transportation Administration and the Office of Management and Budget when they tried to divert rail funding to non-rail purposes not authorized by the Congress.

Light rail systems in Cleveland, Newark, Pittsburgh and San Diego averaged 11% more riders in the first three quarters of 1985 than they carried during the same months of 1984, and the trend is up. Rail rapid transit (heavy rail) systems outside New York gained 7.5% over the previous year. As a control statistic, the flexible and ubiquitous transit bus gained 0.8% nationwide over the previous year. Greyhound has signaled its intention to ease out of the bus business via the franchise route and the abandonment of minor lines, while Amtrak reported a 7% gain in intercity rail patronage, despite periodic fare increases.

Urban highway traffic conditions are becoming ever more chaotic. In Fairfax County, Va., and in Phoenix, Ariz., voters approved large bond issues and tax increases to provide local subsidies to supplement lagging state highway funds—which all concerned agree are woefully inadequate for the tasks of maintaining and updating the road network. It is increasingly clear that highways lack the necessary capacity to adequately serve the radial commuting movements in major metropolitan areas. Even with adequate funding, which is not likely, the physical disruptions of building adequate highway capacity in major cities would destroy the vitality of the cities these roads were intended to serve. Vast acres of paving and parking lots do not stimulate business or generate real estate taxes.

Traffic congestion in the suburbs proves that business cannot retreat there to escape. Indeed, traffic problems are compounded with large increases in vehicle-miles traveled to cover longer commuting distances not served by good transit. No one can continue to claim that "highways pay their own way." Over $10 billion a year is needed from other sources to supplement highway user fees, and significant increases in these fees are predicted all across the country to meet the twin challenges of improved fuel economy and deteriorating infrastructure.

• **Metrorail: A capital investment.** The Washington Metropolitan Area Council of Governments (COG) recently released its 1985 cordon count, which showed that transit use was up 14% over 1983 and 37% over 1977, the last all-bus year across the cordon. With the completion of I-66, auto travel also increased 3% in two years. For the first time since the Second World War, when Washington still had streetcars, rail transit carried more passengers across the cordon than buses did. Since Metrorail service began in 1976, transit riders on both modes (rail and bus) have increased 50% and revenue is up an astounding 221%. District of Columbia traffic officials have found that the shift to transit has resulted in the speed-up of highway traffic. The distance covered in 25 minutes on East Capitol Street in the rush hour has increased from 3.2 miles to 9.0 miles. In Alexandria, state and city officials reported traffic moved twice as fast after Metrorail came to town at the end of 1983.

Congressman Stan Parris (R.-Va.), a conservative, discovered that 70% of his constituents favor inauguration of commuter rail service between Virginia and Washington, D.C. CSX and Norfolk Southern have agreed to provide the service under contract. And Amtrak has offered to carry commuters on its "Virginian" train to ease congestion on the Interstates, where car and van pools, plus some cheaters, have repeatedly clogged the express bus lanes on the highways. COG reports that private commuter bus service has reached its lowest ebb, despite the commuters' increasing needs for transportation. While COG blames much of the bus decline on the expanding Metrorail system, its report reveals that MARC (Amtrak-B&O) commuter rail service gained passengers, even with the availability of parallel Metrorail lines. Next year MARC (Maryland Department of Transportation) will have 125-mph AEM7 electric locomotives and stainless steel passenger coaches, to give ridership a further boost.

Arlington County, Va., reported the most

confounds its critics

RAIL TRANSIT RIDERSHIP

Average Weekday Passengers, First Three Quarters of 1985

Light Rail	1984	1985	Change
Cleveland	17,455	16,600	−4.9%
Newark	14,566	17,391	+19.4%
Pittsburgh	14,570	17,600	+20.8%
San Diego	17,239	19,200	+13.7%
TOTAL	**63,830**	**70,791**	**+10.9%**
Rail Rapid Transit			
Atlanta	174,803	222,000	+27.0%
Baltimore	25,675	37,100	+44.5%
Boston	343,871	373,100	+8.5%
Chicago	522,933	531,300	+1.6%
Cleveland	20,605	18,400	−10.7%
New York	3,242,460	3,268,400	+0.2%
Philadelphia	351,353	351,000	−0.1%
San Francisco	219,208	227,100	+3.6%
Toronto	932,498	967,000	+3.7%
Washington	393,689	480,300	+22.0%
TOTAL	**6,227,095**	**6,475,700**	**+4.0%**
Total, excl. N.Y.	**2,984,635**	**3,207,300**	**+7.5%**
Commuter Railroad			
Boston	44,000	45,760	+4.0%
Chicago	219,000	228,000	+4.0%
Metro−North	133,700	140,000	+4.5%
Long Island	270,000	271,500	+0.5%
New Jersey Transit	130,000	140,000	+7.3%
Philadelphia	60,000	70,000	+16.4%
San Francisco	18,250	19,000	+4.0%
Transit Bus Service	17,645,128	17,786,289	+0.8%

Source: APTA Monthly Reports

spectacular results. Since two new rail lines began to serve the county, employment has begun to approach the total population of the county. Unemployment is only 3½%. Office vacancies are just 3½% despite the billions of dollars worth of new construction. Tax rates have declined from 1½% of market value to 0.95%, the lowest in the metropolitan area, a direct result of the highest concentration of rail service—which the taxpayers have voted three-to-one to pay for. The average Arlington resident makes over 100 transit trips per year, as compared to 75 in Chicago and 50 in Los Angeles, both of which are lower-income, more densely populated areas. Los Angeles has not missed this point. Even without federal aid, the Los Angeles County Transportation Commission broke ground Oct. 31, 1985, for a 22-mile light rail line.

With no change in rail service in Arlington County last year, other than more cars on trains, Metrorail's improved performance attracted 12% more riders; the systemwide increase was 16% as service was extended 14 miles to the Maryland towns of Bethesda and Rockville. Auto parking space at most stations is in very short supply, despite the provision of nearly 15,000 spaces.

This upbeat trend is expected to continue. In June, a new nine-mile rail line into Fairfax County is scheduled to open, which will provide an alternative to the bumper-to-bumper rush hour traffic on I-66 outside the Capital Beltway (I-495).

This service expansion has confounded rail critics who predicted increasing deficits. In FY 1985, Metrorail revenue exceeded budget, but expenses were far under budget. With improved cost control in the Metrobus operation, the Transit Authority refunded $8 million to its supporting jurisdictions and set aside $3 million for reserves. The cost per car-mile tumbled sharply. Metrorail earned 65% of its operating costs from fares, while the buses covered 38%. The system average was just over 50%, compared to 40% in the bus industry generally.

Meanwhile, the U.S. DOT has released a report that found that a rail line proposed to Dulles Airport would attract sufficient traffic to more than cover all operating costs, and would generate sufficient property appreciation to outweigh its construction cost. The line would be built in the median of the Dulles Access Road, now severely congested by commuters who choose not to ride the available buses. Highway advocates are criticizing the report before they have even read it.

• **San Mateo changes its mind.** Across the continent, San Mateo voters reversed their 20-year-old reluctance to join the Bay Area Rapid Transit District. Now that BART has overcome its teething problems, and is carrying more passengers every year, at a very low 18 cents per passenger-mile operating cost, San Mateo County has decided it wants in. A $150-million extension is now under way. With most bus costs running 25 cents per passenger-mile or higher, San Mateo folks know a good thing after they have seen it.

In San Francisco, the Muni Metro light rail lines are attracting one and one-half times as many riders as the previous Market Street surface operation, and two new lines are being engineered.

In San Diego, as construction proceeds on the East Urban trolley line, the original South Bay (SD&IV Railroad) line to San Ysidro gained another 14% in ridership last year, with no significant change in service. Most noteworthy, however, was the finding of the U.S. DOT that the San Diego Trolley had, despite its high quality service, the lowest operating cost per passenger-mile (12 cents) of any transit system of any kind or size in any city.

Pittsburgh's new light rail subway is demonstrating spectacular passenger appeal. The initial surge in ridership has continued right up to the latest reports, with increases of over 100% on the same service pattern, brought about by freeing trolleys from Triangle Traffic where they had no priority. Steel industry problems have not favored Pittsburgh's economy, but with improved transit, downtown business is up 20% near subway stops. Next year, construction should be completed on the Mt. Lebanon tunnel, to permit restoration of the Dormont line service, now temporarily discontinued. Only then can the 55 new articulated cars be employed in service.

Because of federal funding hold-ups, Buffalo has not been able to complete its light rail system, but has opened a 5.4-mile section, including a 1.2-mile surface Main Street Mall segment. Ridership has reached 17,000 on

COSTS PER PASSENGER MILE: RAIL VS. BUS

	Rail	Bus
San Diego	12.0c	23.9c
Atlanta - MARTA	15.6c	22.3c
Philadelphia - SEPTA rapid transit	17.1c	29.7c
East Bay (Oakland, Cal.) - BART ACT	17.3c	21.1c
Chicago CTA	17.5c	30.8c
Chicago RTA	16.7c	
San Francisco MUNI	21.6c	25.0c
USA Average	22.3c	29.2c
New York City NYCTA	24.2c	32.8c
Cleveland GCRTA	28.3c	22.9c
Washington, D.C. - WMATA	29.6c	33.5c
Boston - MBTA	33.3c	50.0c

Source: UMTA-MA-06-0107-85-1 December 1984 (Section 15 Report)

(The above data was selected for its availability. Certain other metropolitan areas did not have the necessary data available, or in correct form.)

weekdays, a good omen for the full 6.4-mile line that is to be in revenue service by next fall. Snow should no longer be a serious deterrent to mobility on Main Street.

Baltimore is enjoying strong patronage growth as its Metro attracts 44.5% more riders than last year on an expanded schedule, with negligible operating problems. A six-mile extension into the suburbs is well under way and is expected to shape a new suburban city.

The 4½-mile Newark City Subway is also sharing in the transit renaissance, with its rehabilitation largely completed. Ridership is up 11% over last year. New Jersey Transit's huge commuter rail operation also reports growing ridership, up 7.3% over last year. Electrification work continues on the Long Branch line, now that the Morris & Essex has been converted to high voltage. A large fleet of new buses has also brought 5% growth to that portion of N.J. Transit's business. Revenue growth has helped to avoid a fare increase for FY 1986.

Expansion in Atlanta has brought invigorating rail growth. The North-South line now extends from Brookhaven to Lakewood, 15 miles, attracting 27% more riders than the shorter version did last year. New cars continue to arrive, and extensions are under construction. Parking charges have been instituted at the stations in order to increase revenue and to ration scarce space.

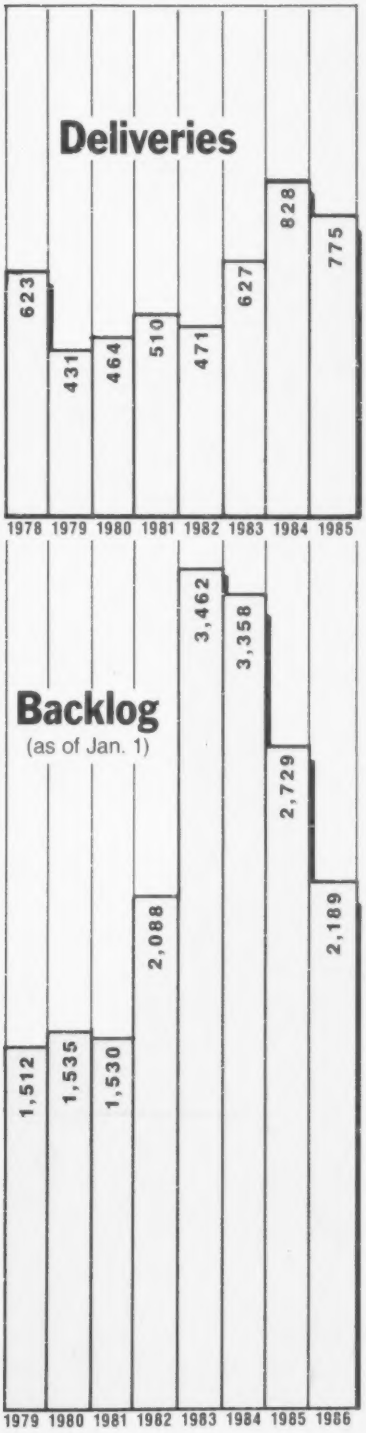
Portland and Sacramento are well along with the construction of new LRT lines from downtown malls to the suburbs, with both using parts of former interurban rail rights-of-way. Service planning is now under way. San Jose is beginning to follow, and studies are in progress in Houston, Columbus and other cities. A market analysis in Columbus found that 60% of the population dislikes driving downtown, preferring rail to bus transit by a 2-to-1 margin.

Already out of the study stage, and advancing fast toward construction, is Dallas with its plan for a light rail system that will total 160 miles by the time it is completed in the year 2010.

In Philadelphia, new airport trains are at-

(Continued on page 77)

Passenger-car market at a glance



These cars were delivered in 1985:

Purchaser	No. of cars	Type	Builder
Amtrak	3	Intercity (prototype)[1]	Budd
Atlanta (MARTA)	42	Rapid transit	Hitachi, C. Itoh
Chicago (CTA)	112	Rapid transit	Transit America
Cleveland	45	Rapid transit	Tokyu Car Corp.
Miami (MDTA)	70	Rapid transit	Transit America
New York (LIRR)	74	Commuter	Transit America
New York (Metro-North)	12	Commuter	Transit America
	19	Commuter	Bombardier
New York (NYCTA)	94	Rapid transit	Kawasaki/Nissho Iwai
Pittsburgh (PAT)	35	Light rail	Siemens-Duewag
Portland (Tri-Met)	19	Light rail	Bombardier
Sacramento	3	Light rail	Siemens-Duewag
San Diego (MTDB)	6	Light rail	Siemens-Duewag
San Francisco (BART)	4	Rapid transit	Alsthom
San Francisco (CALTRANS)	63	Commuter	Nippon Sharyo
Vancouver (BC Transit)	100	Light rail	UTDC
Washington (WMATA)	74	Rapid transit	Breda
Total	**775**		

[1]Car shells manufactured by Budd, assembled by Amtrak at Beech Grove.

Work goes forward on this undelivered backlog:

Purchaser	No. of cars	Type	Builder
Atlanta (MARTA)	54	Rapid transit	Hitachi, C. Itoh
Baltimore (MdMTA)	28	Rapid transit	Transit America
Boston (MBTA)	58	Rapid transit	Can-Car (UTDC)
	50	Light rail	Kinki-Sharyo
	34	Commuter	Messerschmitt-Bolkow-Blohm GmbH.
Buffalo (NFTA)	1[2]	Light rail	Tokyu Car Corp.
Chicago (CTA)	154	Rapid transit	Transit America
Detroit (SEMTA)	12	Advanced light rail transit	UTDC
Miami (MDTA)	10	Rapid transit	Transit America
New York (CDOT)	20	Commuter	Bombardier
New York (LIRR)	100	Commuter	Transit America
New York (Metro-North CDOT)	54	Commuter	Mitsui/Tokyo Car
New York (NYCTA)	225	Rapid transit	Westinghouse Amrail
	825	Rapid transit	Bombardier
PATH (PA of NY/NJ)	95	Rapid transit	Kawasaki Heavy Industries Ltd.
Pittsburgh (PAT)	20	Light rail	Siemens-Duewag
Portland (Tri-Met)	4	Light rail	Bombardier
Sacramento	23	Light rail	Siemens-Duewag
San Francisco (BART)	150	Rapid transit	Alsthom
San Francisco (CALTRANS)	10	Commuter	Nippon Sharyo
Toronto (TTC)	4	ICTS	UTDC Group
	126	Rapid transit	UTDC Group
	52	Light rail	UTDC Group
Vancouver (BC Transit)	14	Light rail	UTDC
Washington (WMATA)	66	Rapid transit	Breda
Total	**2,189**		

[2]Damaged in shipment; part of original order of 27 LRVs.

Orders likely to develop in 1986:

Purchaser	No. of cars	Type
Dallas (DART)	100	Light rail
Los Angeles (SCRTD)	30	Rapid transit
New York (Metro-North)	12	Commuter
Philadelphia (SEPTA)	28	Rapid transit
Sacramento	6	Light rail
San Diego (MTDB)	10-14	Light rail
VIA Rail-Canada	130	Intercity
Total	**316-320**	

The five year (1987-1991 outlook):

Purchaser	No. of cars	Type
Amtrak[3]	60-140	Intercity
Atlanta (MARTA)	0-40	Rapid transit
Boston (MBTA)	60	Commuter
Chicago (CTA)	100-400	Rapid transit
Chicago (Metra)	48-93	Commuter
Cleveland (GCRTA)	2-28[4]	Rapid transit
Detroit (SEMTA)	0-25	Commuter
Los Angeles (LACTC)	44-60	Light rail
Los Angeles (SCRTD)	90-110	Rapid transit
Miami (MDTA)	100	Rapid transit
New York (NYCTA)	416[5]	Rapid transit
Philadelphia (SEPTA)	35-70	Commuter
	70	Light rail
Portland (Tri-Met)	0-35	Light rail
Sacramento	0-10	Light rail
San Diego (MTDB)	6-15	Light rail
Toronto (GO Transit)	23-64	Commuter
Vancouver (BC Transit)	0-30	Light rail
Washington (WMATA)	200-300	Rapid transit
Total	**1,254-2,066**	

[3]1983 projection.
[4]Scheduled for rehabilitation.
[5]Between 1987-1989; possible 200 per year thereafter as necessary to retain approximate average fleet age.

REVENUES AND EXPENSES OF RAILWAYS

Third quarter figures of calendar year 1985

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

		Operating revenues				Operating expenses													
						Way & structures			Equipment										
		Freight	Other	Total 1985	Total 1984	Total 1985	Total 1984	1985 Deprec.	Total 1985	Total 1984	1985 Deprec.	Total 1985	Total 1984	Operating 1985	Ratio 1984	Income after fixed charges 1985	Income after fixed charges 1984	1985 Net Ry. operating income	Net income 1985	Net income 1984
Amtrak	3 mos.	—	228,028	228,028	204,551	62,863	21,412	25,485	91,561	99,641	20,805	393,856	371,678	172.72	181.80	(159,776)	(158,556)	(165,828)	(159,776)	(158,556)
	9 mos.	—	620,992	620,992	550,629	183,099	153,346	66,894	286,216	285,491	61,856	1,200,394	1,148,691	193.30	208.61	(562,054)	(578,790)	(579,402)	(562,054)	(578,790)
Atchison, Topeka & Santa Fe	3 mos.	523,072	10,551	533,623	592,472	75,034	84,885	14,865	126,348	131,197	24,077	485,625	518,213	91.00	87.46	47,572	70,030	35,442	34,782	42,439
	9 mos.	1,592,150	33,607	1,625,757	1,748,013	256,214	254,839	43,681	379,197	405,245	71,908	1,507,775	1,571,157	92.74	89.88	122,453	168,798	91,265	95,063	109,117
Baltimore & Ohio	3 mos.	237,254	8,856	246,110	260,596	37,834	47,244	10,517	60,019	58,820	7,461	230,277	247,746	93.56	95.06	12,517	9,394	19,781	11,002	8,130
	9 mos.	741,465	29,479	770,944	807,865	126,429	141,619	31,027	204,126	178,546	22,045	744,055	750,228	96.51	92.86	26,486	51,805	42,380	25,646	37,682
Boston & Maine	3 mos.	27,403	1,235	28,638	32,203	4,091	4,428	442	9,622	9,149	80	28,698	28,945	100.20	89.88	451	3,769	14	451	3,769
	9 mos.	83,868	3,803	87,671	95,308	12,168	13,294	1,272	28,099	28,000	208	86,423	88,519	98.57	92.87	2,530	8,011	1,470	2,530	8,011
Burlington Northern	3 mos.	981,674	20,664	1,002,337	1,110,330	145,707	151,765	43,107	180,928	188,402	16,040	786,308	844,332	78.44	76.04	234,560	254,520	126,110	144,631	145,308
	9 mos.	2,995,524	64,109	3,059,633	3,330,128	464,726	456,711	127,877	549,311	585,070	48,714	2,453,551	2,612,176	80.19	78.44	629,851	730,876	354,092	377,831	422,500
Chesapeake & Ohio	3 mos.	250,395	9,238	259,633	294,867	32,842	35,384	9,182	53,548	61,593	3,913	206,048	227,742	79.36	77.23	64,982	89,160	33,075	44,465	59,151
	9 mos.	746,191	24,867	771,058	846,406	102,063	110,601	27,096	158,482	183,484	11,568	629,466	696,813	81.63	82.32	167,723	204,001	86,287	112,398	140,132
Chicago & North Western	3 mos.	180,758	24,527	205,285	221,081	34,368	27,614	5,183	48,930	53,874	3,778	192,743	195,904	93.89	88.61	2,233	20,300	12,394	5,642	17,675
	9 mos.	542,608	75,791	618,399	676,481	113,523	96,236	19,334	146,025	162,193	11,874	598,291	620,290	96.74	91.69	(10,277)	35,629	22,107	(4,693)	30,854
Conrail	3 mos.	741,136	28,992	770,128	827,711	111,768	119,780	22,680	165,461	178,356	34,216	659,261	698,301	85.60	84.36	120,258	140,835	88,721	120,258	140,835
	9 mos.	2,297,264	86,198	2,383,462	2,539,275	350,066	367,122	67,327	524,777	562,381	104,972	2,093,502	2,151,086	87.83	84.71	329,743	410,644	223,416	329,743	410,644
Delaware & Hudson	3 mos.	28,055	301	28,356	32,010	4,794	5,519	272	8,289	10,394	145	27,988	32,442	98.70	101.34	(32)	(706)	371	(32)	(706)
	9 mos.	81,086	1,229	82,315	94,225	14,070	15,997	795	24,274	28,620	456	84,284	95,754	102.39	101.62	(2,457)	(2,797)	(1,909)	(2,457)	(2,797)
Denver & Rio Grande Western	3 mos.	77,185	1,331	78,516	91,623	10,947	13,840	3,658	14,694	17,411	3,321	68,301	80,846	86.98	88.23	9,543	10,583	6,640	5,941	7,331
	9 mos.	244,169	3,803	247,972	273,084	37,979	42,386	10,810	45,544	52,457	9,969	219,442	245,584	88.49	89.92	27,579	25,704	18,442	17,122	17,365
Elgin, Joliet & Eastern	3 mos.	14,525	6,244	20,769	17,831	4,123	3,805	619	3,107	1,867	1,970	20,189	17,826	97.20	99.97	2,326	1,638	(84)	1,662	1,221
	9 mos.	45,637	19,670	65,307	72,025	10,696	11,271	1,789	9,986	10,508	6,007	62,247	64,331	95.31	89.31	7,779	12,572	56	4,775	7,637
Florida East Coast	3 mos.	26,318	505	26,823	26,482	4,592	4,014	1,202	5,337	4,668	1,479	22,664	21,281	84.49	80.36	7,739	9,428	820	4,400	5,679
	9 mos.	84,703	1,496	86,199	88,647	14,228	12,738	3,683	16,700	14,836	3,465	68,667	65,540	79.66	73.93	29,872	35,293	4,749	17,089	20,950

Grand Trunk Western	3 mos	77,299	3,552	80,851	81,043	10,231	10,580	1,670	17,119	18,826	1,606	80,203	82,500	99.19	101.79	(968)	(3,533)	866	77	(2,292)
	9 mos	245,265	10,117	255,382	251,352	31,596	30,837	4,995	53,637	57,352	4,916	252,317	248,631	98.79	98.91	(313)	(2,777)	3,939	3,895	451
Illinois Central Gulf	3 mos.	189,207	17,958	207,165	229,382	29,138	29,704	11,582	61,823	70,511	5,012	199,243	213,541	96.17	93.09	5,572	35,832	3,561	3,960	29,179
	9 mos.	617,052	55,388	672,440	724,891	88,847	88,920	34,857	201,896	210,521	15,228	640,015	675,164	95.17	93.14	16,688	65,871	26,377	13,065	55,299
Kansas City Southern	3 mos	76,165	3,692	79,857	84,745	12,377	11,920	3,770	16,708	17,010	5,344	66,232	69,368	82.93	81.85	12,047	14,059	9,012	7,305	8,077
	9 mos	230,372	10,792	241,164	248,116	35,673	36,393	10,972	52,896	56,319	16,145	205,562	209,836	85.23	84.57	30,109	32,664	24,112	18,258	19,676
Missouri-Kansas-Texas	3 mos.	65,488	2,862	68,350	71,686	13,226	15,005	2,552	16,323	16,424	1,720	64,778	67,255	94.77	91.81	1,240	3,196	4,102	1,240	3,196
	9 mos.	196,319	9,127	205,446	212,553	39,159	40,164	7,642	48,989	51,810	5,286	194,071	198,709	94.46	93.48	4,054	7,934	6,656	(1,746)	7,934
Missouri Pacific	3 mos	387,426	12,583	400,009	462,477	58,733	67,832	13,254	95,035	98,312	18,509	378,934	394,818	94.73	85.37	1,346	63,830	34,955	12,907	44,555
	9 mos	1,220,021	35,237	1,255,258	1,356,999	185,434	194,205	37,926	302,574	296,954	55,659	1,181,757	1,189,089	94.14	87.62	31,163	152,184	91,430	42,129	106,642
Norfolk & Western	3 mos	391,863	16,461	408,324	458,695	67,190	68,187	10,752	87,965	85,845	13,534	334,560	344,164	81.93	75.03	130,402	140,414	22,733	78,721	83,157
	9 mos	1,236,216	50,614	1,286,830	1,351,936	184,491	212,084	32,370	259,956	253,488	39,682	1,013,319	1,055,650	78.74	78.08	365,689	368,796	127,710	217,937	217,901
St Louis Southwestern	3 mos	93,853	1,598	95,451	107,094	14,825	13,360	4,543	22,811	28,668	5,373	84,170	101,494	88.18	94.77	11,219	10,127	7,073	7,011	7,187
	9 mos	290,009	4,743	294,752	331,223	43,329	41,608	13,527	76,891	83,847	16,444	276,485	299,782	93.80	90.50	21,285	41,657	10,513	13,531	28,436
Seaboard	3 mos	615,953	11,815	627,768	675,258	88,506	89,183	18,231	118,111	169,413	(8,284)	540,636	587,727	86.12	87.03	77,410	82,787	63,107	49,483	54,438
	9 mos	1,923,619	47,295	1,970,914	2,082,387	264,763	258,655	54,575	460,438	509,129	29,933	1,720,465	1,775,309	87.29	85.25	251,327	304,101	182,228	171,379	200,988
Soo Line	3 mos	152,672	5,594	158,266	82,259	35,198	16,816	7,360	40,097	17,597	3,660	158,815	73,106	100.34	88.87	(8,894)	12,652	5,172	(3,687)	7,473
	9 mos	429,550	13,692	443,242	237,652	90,539	46,627	18,707	110,767	53,635	10,195	438,340	220,072	98.89	92.60	(17,218)	22,802	17,072	(6,632)	13,962
Southern	3 mos.	407,264	9,156	416,420	444,152	59,822	69,025	18,464	83,938	90,329	19,011	329,702	359,986	79.17	81.05	84,224	89,976	60,964	57,116	52,033
	9 mos.	1,254,220	30,104	1,284,324	1,349,464	185,818	191,353	55,757	267,837	271,833	57,306	1,031,207	1,079,961	80.29	80.02	250,637	273,773	161,525	154,951	158,668
Southern Pacific	3 mos	497,350	15,322	512,672	542,692	63,759	55,711	23,281	136,696	156,817	19,760	508,096	541,540	99.10	99.78	43,464	11,964	11,855	50,360	23,035
	9 mos	1,523,196	48,439	1,570,635	1,650,931	206,210	172,341	69,495	433,661	479,510	60,045	1,577,384	1,642,458	100.46	99.48	43,591	44,153	5,375	55,174	82,844
Union Pacific	3 mos.	441,427	5,738	447,165	462,106	68,674	71,502	17,408	88,364	102,730	22,377	396,509	408,373	88.67	88.37	64,485	47,127	25,967	39,754	31,604
	9 mos.	1,402,471	16,000	1,418,471	1,433,442	213,809	214,938	51,593	281,152	320,474	68,057	1,235,465	1,285,917	87.09	89.70	201,551	135,248	114,322	132,710	89,925
Western Pacific	3 mos	40,169	740	40,909	37,594	5,031	7,791	1,220	8,967	7,039	1,223	44,510	41,055	108.80	109.20	(6,149)	(7,544)	788	(1,760)	(4,129)
	9 mos	114,211	1,870	116,081	116,057	21,209	20,631	2,985	28,148	24,381	3,138	134,260	123,018	115.66	105.99	(24,287)	(15,898)	(3,585)	(9,693)	(7,392)

Source: Interstate Commerce Commission

100 YEARS AGO IN

(January 1886)

Senator Coke has introduced a bill in the United States senate to establish a national live stock highway. It provides that public lands in range 41, lying along the east line of the state of Colorado, and which are about two miles in width, shall be reserved from settlement for ten years and set apart as a national live stock highway, to be used for live stock passing from one state to another or to market.

* * *

A steam motor railroad is being built between Colton and San Bernardino, Cal., a distance of 5 miles.

* * *

The adoption of the cable system for street car propulsion in Chicago has now after a trial of five years been proved a complete success. The last report of the Chicago City railway company, to whom is due the credit of introducing this system east of San Francisco, states that the cables and machinery have operated with great satisfaction throughout the year.

* * *

Los Angeles, Cal., has four lines of street cars in operation and about fifteen miles of road; one more is being built and two more are ready to commence construction.

* * *

The printed bill of fare for the Chicago & North-Western dining cars on New Year's day was a very attractive work of art on its exterior pages, while the *menu* presented inside is worthy of any first class hotel in the country. How such a spread can be served for 75 cents is a mystery which can only be solved on the theory that the company enjoys making its patrons comfortable even if it loses money by doing so.

* * *

Five important ship canal projects are advocated in this country, as follows: The enlargement of the Erie canal, the construction of the Hennepin canal to connect lake Michigan with the Mississippi river, the Columbus canal in Ohio to connect lake Erie with the Ohio river, the proposed canal across Florida, and the big ditch that has been commenced across the Cape Cod peninsula in Massachusetts. All these schemes are calling for national and state aid to a vast amount, at the very time when politicians are proposing to revoke the grant of wilderness and desert land made to a number of railway companies and in the faith of which several great roads have been and are being constructed. It is difficult to see any consistency in voting millions of hard cash for the construction of canals by government in competition with railways built by private capital, and at the same time to take away from important railways the comparatively little assistance which has been given them in the shape of land grants.

Rail transit review and outlook

(Continued from page 48)

tracting triple the patronage of the express buses they replaced. With the Center City Commuter Railroad Connection downtown, commuter rail ridership is up 16½%. Following the introduction a few years ago of Kawasaki cars into the light rail subway, ridership jumped 43%. Philadelphia's mayor has taken a position favoring improved light rail operations.

Chicago's commuter rail services are enjoying a comeback from their loss of financial support a few years ago. Ridership increased 4% overall, with the electric South Shore, having acquired new cars and new owners, attracting 10% growth. Rapid transit in Chicago also had a good year, with the extension of service to O'Hare Airport offering needed relief to severe expressway congestion. A Southwest line is now under construction.

Boston has seen a turnaround in commuter rail fortunes after the disastrous bridge fires of last year. A new North Station train platform has been built, 34 cars are on order, and ridership is up 4% even before all of the service disruptions have been cleared. MBTA and B&M displayed heroic efforts in overcoming the disruptions they faced last year. The MBTA also put a Red Line extension into service to Alewife Parkway, resulting in an 8% rider gain on the rapid transit system. On order are 50 light rail cars for the Green Line and 58 cars for the Red Line. The Southwest Corridor Project is in the home stretch to 1) replace the Orange Line elevated to Forest Hills, 2) restore Amtrak to its main line, 3) reopen Back Bay Station, and 4) restore commuter rail service to Needham.

• **Fund-finding.** As federal aid for transit shrinks, the improved cost effectiveness and increased revenue potential of rail transit looms ever more important. The federal aid program is a two-edged sword. While efficiency and effectiveness argue strongly for rail transit, some transit officials are haunted by the specter of reduced or lost federal aid. Others, like Port Authority Transit Corp. (PATCO) years ago, and San Diego, Los Angeles and Dallas today, have opted to do what is best and necessary, even without federal aid.

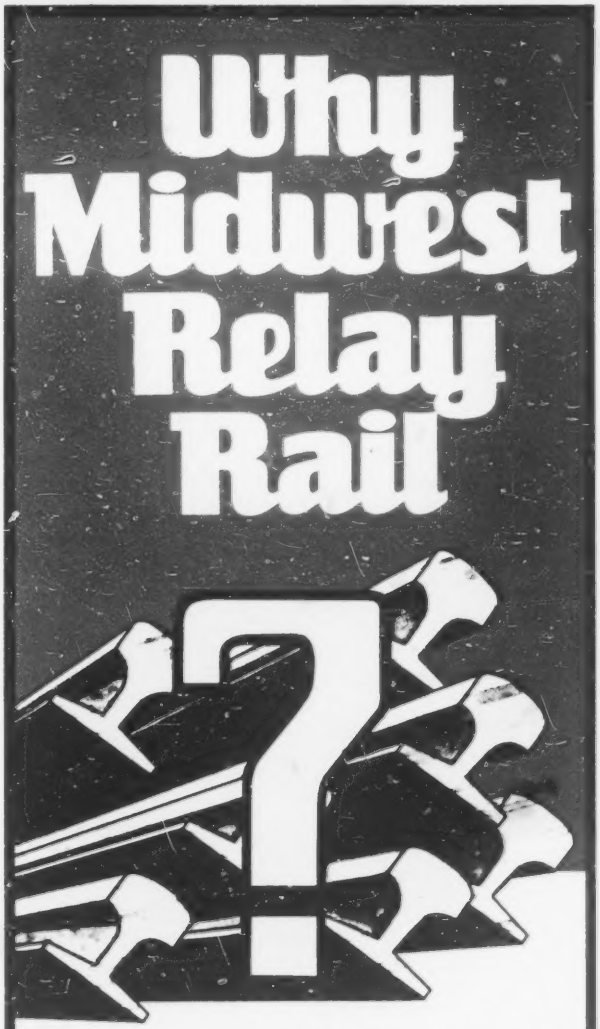
San Diego used California's transit funding program to build its first line; Los Angeles has augmented this program with a local tax increment to build a light rail line. Dallas has obtained voter approval for an increased local tax to support its $3.6-billion dollar program, as BART and MARTA (Atlanta) did but without their dependence on supplementary federal aid. Arlington County has shown that property appreciation resulting from new rail lines can fund part of the cost without any new taxes. Maryland pools highway and transit funding from a common transportation fund.

Other analysts are looking at the motor freight industry for funding ideas. Many truck lines arrange with county or state industrial development authorities to fund and build the necessary terminal facilities with full tax exemption, and then lease them at tax deductible rentals. Rail transit could use a similar technique, as Philadelphia did when it electrified the former Reading Newtown Branch to Fox Chase, and purchased 75 multiple-unit commuter cars and 270 subway cars. There was no federal aid for any of these very successful projects.

It is interesting to note that the non-federally aided projects have consistently earned 75% to 85% of their operating costs from the farebox, a far higher ratio than for federally aided projects. The only problem is that the arch competitor, the federally funded highway, will obtain priority funding if transit aid is withdrawn. That will unnaturally tilt local political decisions to the future detriment of the community.

Federal aid does not come cheap. The worst example was the comprehensive effort to design a new standard bus, the Transbus. After spending tens of millions of federal dollars on a few prototypes, bids were requested from manufacturers to build the buses. Not one firm in the entire world would bid on the "perfect" bus. The transit industry does not need that kind of federal aid. What it does need is treatment equal to that offered to the highway builders. ■

(Material for this article was contributed by E.L. Tennyson, a professional engineer with 35 years experience in industry and government.)



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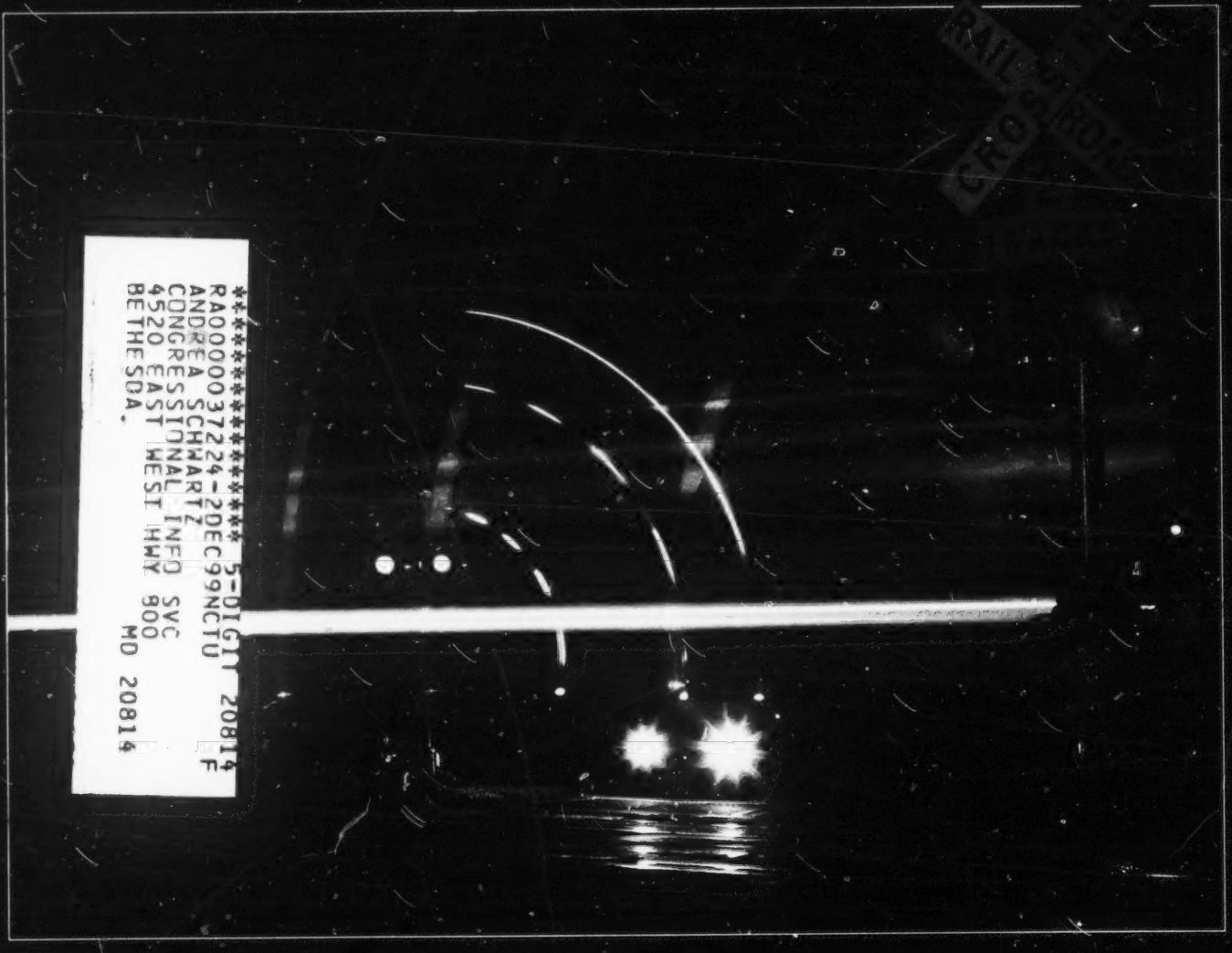
$4.5 billion-dollar TRX: Just a beginning



Crash at the crossing

High-productivity railroading: The consolidation route

RAILWAY AGE
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February 1986

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24 High-productivity railroading: The consolidation route

There are several approaches to achieving greater efficiency via consolidation, but each requires a breaking down of regulatory, institutional and labor barriers.

28 Crisis at the crossing

A decade's progress in reducing crossing fatalities could be reversed if there is any letup in advancing the three "E's"—engineering, education, enforcement.

33 Locomotive shops eye the short lines

The proliferation of short lines offers both pluses and minuses to facilities that in lean times are anxiously scouring the country for additional business.

36 Take-off time for TankTrain?

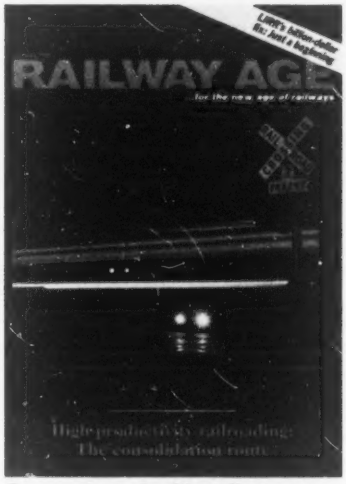
Having demonstrated that it can help solve shippers' logistical problems and help win railroads new business, the GATX system could be headed for growth.

38 Bearings: Old supplier, new market

With the market for journal bearings fast drying up, Magnus is producing support bearings for traction motors in its highly-automated, sole surviving plant.

43 Long Island's billion-dollar fix

A $1.1-billion capital program has gone a long way toward shaping up this overworked, 152-year-old commuter railroad—but many important needs remain unmet.



Cover photo by Kent Patterson

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Inside

The great freight car turnaround

LUTHER S. MILLER

"There is perhaps no more uneconomical appliance than the railway freight car as utilized today," New York Air Brake's L.K. Sillcox told a Yale University audience 30 years ago. "It has been estimated that 5% of a freight car's life is spent running loaded, 3% running empty, and 92% in standing on sidings or in shops, or engaged in terminal movements."

It may have been a hell of a way to run a railroad—but that's the way things were, and they stayed that way for many years. In the 1970s, when railroads began their push for deregulation, they complained that they were able to buy only 60,000 new cars a year; they needed 105,000.

At the age of 99, the redoubtable Dr. Sillcox still lectures on railroads; but he no longer talks about car shortages.

The railroads are still telling Congress they need more capital than they can raise with a rate of return that is under 5% (see below). But they no longer talk about 105,000—or even 60,000—new cars a year. On p. 21, you will read about the 1986 capital plans of just three rail systems that together will spend more than $1.5 billion—but you will read very little about freight cars.

Behind this startling turnaround is vastly increased utilization. One reason for this is the deregulation fight that railroads did finally win. Another is the across-the-board leap in productivity achieved through consolidations, which is the subject of the article that starts on p. 24.

Revenue adequacy: An elusive goal

The ICC said Jan. 6 it had established 15.8% as the cost of railroad capital—which means rails need to earn that much to be revenue-adequate. The ICC reported a few days later that as a group railroads earned 4.65% in the year ended last Sept. 30. This was the road-by-road story:

Southern District:

Florida East Coast	3.67%
Illinois Central Gulf	2.31%
Seaboard System	5.34%
Southern	6.67%

Western District:

Santa Fe	3.49%
Burlington Northern	8.29%
Chicago & North Western	2.62%
Denver & Rio Grande Western	4.16%
Kansas City Southern	7.49%
Missouri-Kansas-Texas	3.04%
Missouri Pacific	3.69%
St. Louis Southwestern	2.25%
Soo Line	4.33%
Southern Pacific	0.78%
Union Pacific	4.58%
Western Pacific	0%

Eastern District:

Baltimore & Ohio	2.92%
Boston & Maine	1.25%
Chesapeake & Ohio	4.90%
Conrail	5.64%
Elgin, Joliet & Eastern	0%
Grand Trunk Western	2.23%
Norfolk & Western	5.25%

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LUTHER S. MILLER, Editor

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Silver Spring, Md. 20910, 10214 Southmoor Dr.
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Associate Editor: John H. Armstrong

International Offices
Falmouth, Cornwall, TR11 4RJ, England
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Market Outlook

Facilities

London Underground Limited: Awarded a $24-million contract to Westinghouse Cubic Ltd. for passenger control gates and station monitoring equipment. This follows a $64-million contract awarded last fall for ticket machines and computers for an automatic fare collection system.

Metropolitan Atlanta Rapid Transit Authority: Awarded a $23.3-million contract to the joint venture of J. A. Jones Construction Co./Mitchell Construction Co. for construction of the Chamblee Station on MARTA's North Line in DeKalb County. The station will be in a predominantly industrial neighborhood adjacent to Peachtree-DeKalb Airport.

Seaboard System: Completed a new intermodal facility in New Orleans, La., at a cost of $6.8 million. Tracks at the 30-acre site, which is adjacent to Seaboard's Gentilly Yard, permit up to 60 conventional piggyback cars to be spotted for loading or unloading. There is also trackside parking for 120 trailers or containers and an additional 380 bays for off-track parking. Seaboard recently completed new intermodal facilities at Orlando, Fla., Louisville, Ky., and Evansville, Ind.; terminals are also under construction at Tampa and Jacksonville, Fla., and Atlanta, Ga.

Equipment

Genstar Cement Co.: Has acquired 40 100-ton Twin-Hopper cars from Pullman Leasing Co. under a five-year lease—the first major order for the newly-introduced 3,148-cubic-foot-capacity car. The car is a re-engineered and rebuilt 4,427-cubic-foot-capacity covered hopper car. The center hopper of the original three-hopper car is removed, shortening it to 39 feet, 3 inches; the 100-ton trucks are retained. Existing trough hatches are replaced with four 30-inch chemical-type hatches. The car is equipped with the Pullman Leasing "Sur-Latch" design aluminum hatch cover with a single-latch-over bar. According to Pullman Leasing, the rebuilt car will handle 105 tons, a 25% increase over cars previously used in Genstar service.

Revenue freight carloadings

Commodity	Jan. 4 week	Dec. 28 week	Dec. 21 week	Dec. 14 week
Grain	20,783	17,482	26,192	25,979
Other farm products	3,178	2,870	4,382	4,518
Metallic ores	6,890	8,324	11,158	12,442
Coal	80,242	72,260	116,597	123,338
Crushed stone, gravel and sand	7,461	5,044	8,967	11,012
Nonmetallic minerals	7,320	6,966	10,352	10,588
Grain mill products	8,496	8,184	9,804	10,649
Food and kindred products	7,450	7,236	10,715	11,648
Primary forest products	8,923	5,878	10,690	11,400
Lumber and wood products except furniture	4,644	4,384	6,951	6,730
Pulp, paper and allied products	12,163	10,623	13,415	13,313
Chemicals and allied products	21,013	20,107	23,623	22,279
Petroleum products	4,187	3,754	4,740	4,640
Stone, clay and glass products	7,376	6,005	7,943	9,028
Coke	4,695	4,284	4,488	4,474
Metals and products	7,341	6,041	7,393	7,750
Motor vehicles and equipment	7,329	10,129	18,348	24,022
Waste and scrap materials	5,357	4,251	7,617	8,250
Forwarder and shipper assn. traffic	3,972	3,808	6,268	6,347
All other carloads	42,486	42,368	65,040	64,348
LCL traffic	67	70	98	154
Total Cars Loaded	**271,373**	**250,968**	**374,781**	**392,909**
% change from previous year	3.4	7.1	(0.9)	1.5
Estimated revenue ton-miles (billions)	12.9	12.4	17.6	18.0
% change from previous year	6.5	4.0	0.1	0.3

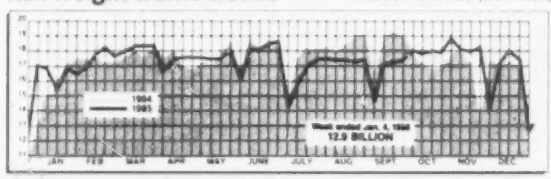
Total:	**1986**	**1985**	**% change**
1 week	12.9	12.1	6.5

Piggyback loadings

	Dec. 28 week	Dec. 21 week	Dec. 14 week
Trailers/containers	61,288	94,565	95,585
Cumulative total, 52 weeks		**% change from 1984**	
Trailers/containers	4,515,878	(1.1)	

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED December 1985	DELIVERED 12 months 1985	DELIVERED 12 months 1984	ORDERED December 1985	ORDERED 12 months 1985	ORDERED 12 months 1984	ON ORDER AND UNDELIVERED Jan. 1, 1986	Average Backlog 1985	Average Backlog 1984
Built new by carbuilders	714	11,674	12,396	558	9,510	15,054	1,759	3,405	5,969
Built new in RR shops	0	406	0	0	0	406	0	23	185
Built new—total	**714**	**12,080**	**12,396**	**558**	**9,510**	**15,460**	**1,759**	**3,428**	**6,154**
Rebuilt	0	0	0	0	0	0	0	0	0
TOTAL	**714**	**12,080**	**12,396**	**558**	**9,510**	**15,460**	**1,759**	**3,428**	**6,154**
Locomotives (new and rebuilt)	69	636	569	N/A	N/A	N/A	52	207	167

Source: Transportation Div., AAR and American Railway Car Institute

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March 1986

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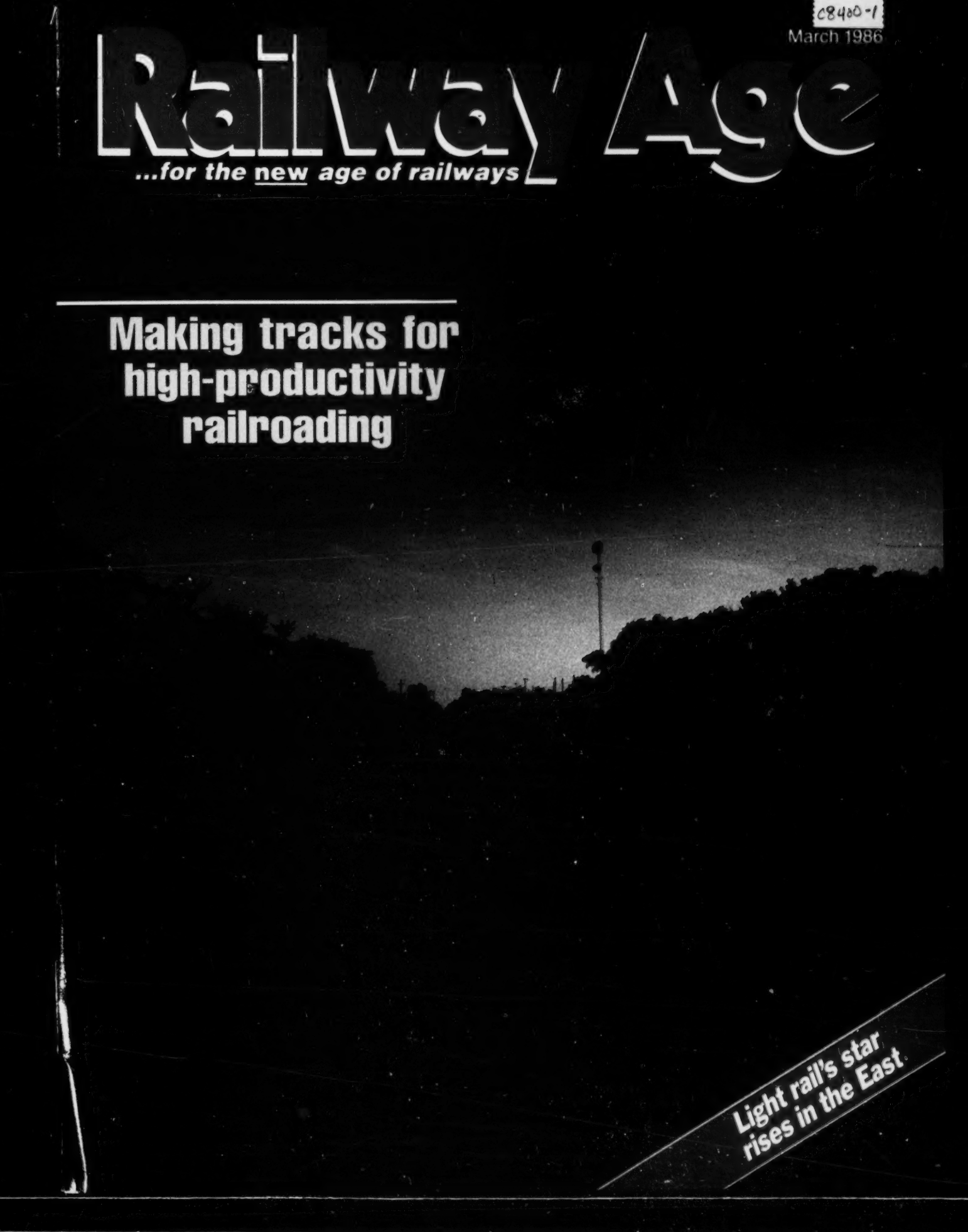
Making tracks for high-productivity railroading



Light rail's star rises in the East

Railway Age
...for the new age of railways

March 1986

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33 Making tracks for improved productivity

There's no way railroads can handle increased traffic and provide better service without improvements in productivity below the wheels.

37 Turning point for turnouts?

After eight decades of steady but undramatic evolution, special trackwork may soon be undergoing some significant changes.

43 A Railroader's Guide to Washington

It isn't always what you know that counts in Washington, but who you know—and know how to reach. This updated guide will help.

57 ATCS: The chips are down

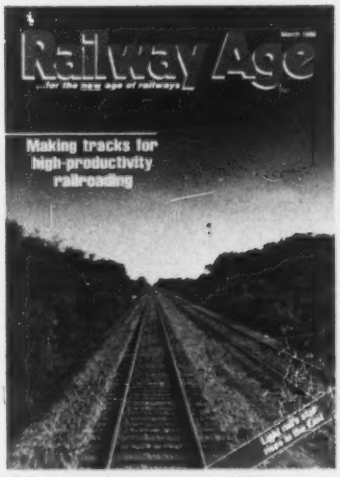
The Automatic Train Control Systems Project is entering a critical phase that gives suppliers a last chance to participate.

66 Where trains meet planes

Six major airports are now served by rail lines, and more soon will be. The big problem so far has been ineffective promotion.

71 Light rail's star rises in the East

Yesterday's transportation has become tomorrow's as street railway systems flourish and expand in half a dozen eastern cities.



ICG track in southern Illinois was photographed by Roy H. Blanchard.

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Market Outlook

Equipment

Guilford Industries: Plans to acquire 79 new locomotives to supplement its present 300-unit fleet if it takes over certain rail lines now operated by Conrail or Norfolk Southern, as contemplated in a divestiture plan NS has drawn up as part of its proposal to purchase Conrail. Guilford also proposes to invest $3 million in new freight cars and $7 million in yard improvements.

Jacksonville Electric Authority: Placed an order with Bethlehem Steel's Freight Car Division for an additional 200 BethGon Coalporters. Division President Ronald L. Zimmermann said the new order will be added to an existing Jacksonville Electric order for 200 steel and aluminum Coalporters.

Union Pacific: Ordered 384 tri-level autoracks from Thrall Car at a cost of $14 million; delivery of the fully-enclosed cars is scheduled to be completed this month.

Facilities

CP Rail: A 1986 capital program now estimated at $500 million (Canadian) includes $150 million for the Rogers Pass grade reduction and tunneling project; $135 million for track and structures upgrading and replacement; and $115 million for equipment. In addition to previously-reported plans for acquisition of 50 new 2,000-hp diesel-electric units, CP Rail will purchase new intermodal equipment and work cars. Approximately $39 million is earmarked for improvements to grain-handling branch lines in western Canada, as part of the federally-funded Branch Line Rehabilitation Program. The railroad also plans installation of new train radio and hotbox detector systems.

New Jersey Transit Corp.: Contracted with Safetran Systems Corp. for supply of $7.5 million in signal and communications equipment for installation on the Matawan-Long Branch section of Jersey Transit's North Coast Line.

Union Pacific: Will expand its intermodal terminal at Stockton, Calif., at a cost of $1.3 million.

Washington Union Station: A $70-million renovation program calls for the revamping of 500,000 square feet of space. Amtrak and Maryland DOT's MARC commuter operations will be returned to the main station (which 10 years ago was turned into a National Visitors Center). Parking space for 1,200 automobiles plus 200 tour buses will be added. Part of the station space will be developed into shops, theaters, restaurants, and offices. Construction management is under the direction of the joint venture of Gilbane Building Co. and the Sherman R. Smoot Co. The development venture consists of LaSalle Partners, Inc., Equity Associates, Williams Jackson Ewing Associates, and Benjamin Thompson Associates Inc. Harry Weese & Associates is the renovation architect.

Revenue freight carloadings

Commodity	Feb. 8 week	Feb. 1 week	Jan. 25 week	Jan. 18 week
Grain	24,598	22,583	26,310	27,902
Other farm products	3,697	4,271	4,297	4,944
Metallic ores	11,900	11,740	11,973	10,491
Coal	114,549	103,191	118,651	117,453
Crushed stone, gravel and sand	9,852	8,607	10,228	9,506
Nonmetallic minerals	8,675	8,351	8,625	8,612
Grain mill products	10,932	10,956	10,838	11,037
Food and kindred products	10,921	10,813	11,463	11,193
Primary forest products	11,480	10,615	11,739	11,859
Lumber and wood products except furniture	7,232	8,092	7,594	7,356
Pulp, paper and allied products	13,552	14,009	13,684	13,760
Chemicals and allied products	23,964	24,393	24,275	24,450
Petroleum products	4,812	5,052	5,138	5,331
Stone, clay and glass products	8,743	8,453	9,489	9,509
Coke	4,479	4,090	4,959	4,462
Metals and products	7,651	8,737	8,829	8,594
Motor vehicles and equipment	22,735	22,632	23,591	22,929
Waste and scrap materials	8,945	8,329	9,197	8,877
Forwarder and shipper assn. traffic	5,622	5,724	5,764	5,698
All other carloads	64,005	61,274	61,678	61,919
LCL traffic	144	145	136	146
Total Cars Loaded	**378,488**	**362,057**	**388,458**	**386,028**
% change from previous year	6.2	(0.5)	18.5	6.0
Estimated revenue ton-miles (billions)	17.5	16.9	18.0	17.9
% change from previous year	6.1	0.4	15.4	6.0

Total:	1986	1985	% change
6 weeks	100.4	94.9	5.7

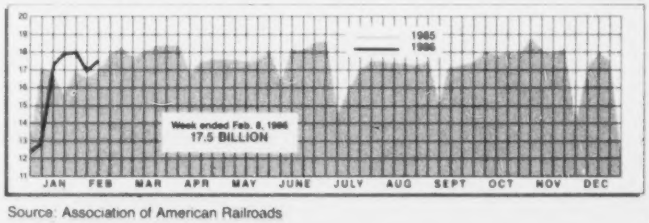
Piggyback loadings

	Feb. 1 week	Jan. 25 week	Jan. 18 week	Jan. 11 week
Trailers/containers	95,259	95,205	95,048	89,094

Cumulative total, 5 weeks		% change from 1985
Trailers/containers	440,658	14.4

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Note: Due to reporting delays, the American Railway Car Institute was unable to supply its January freight-car order and delivery statistics by press time.

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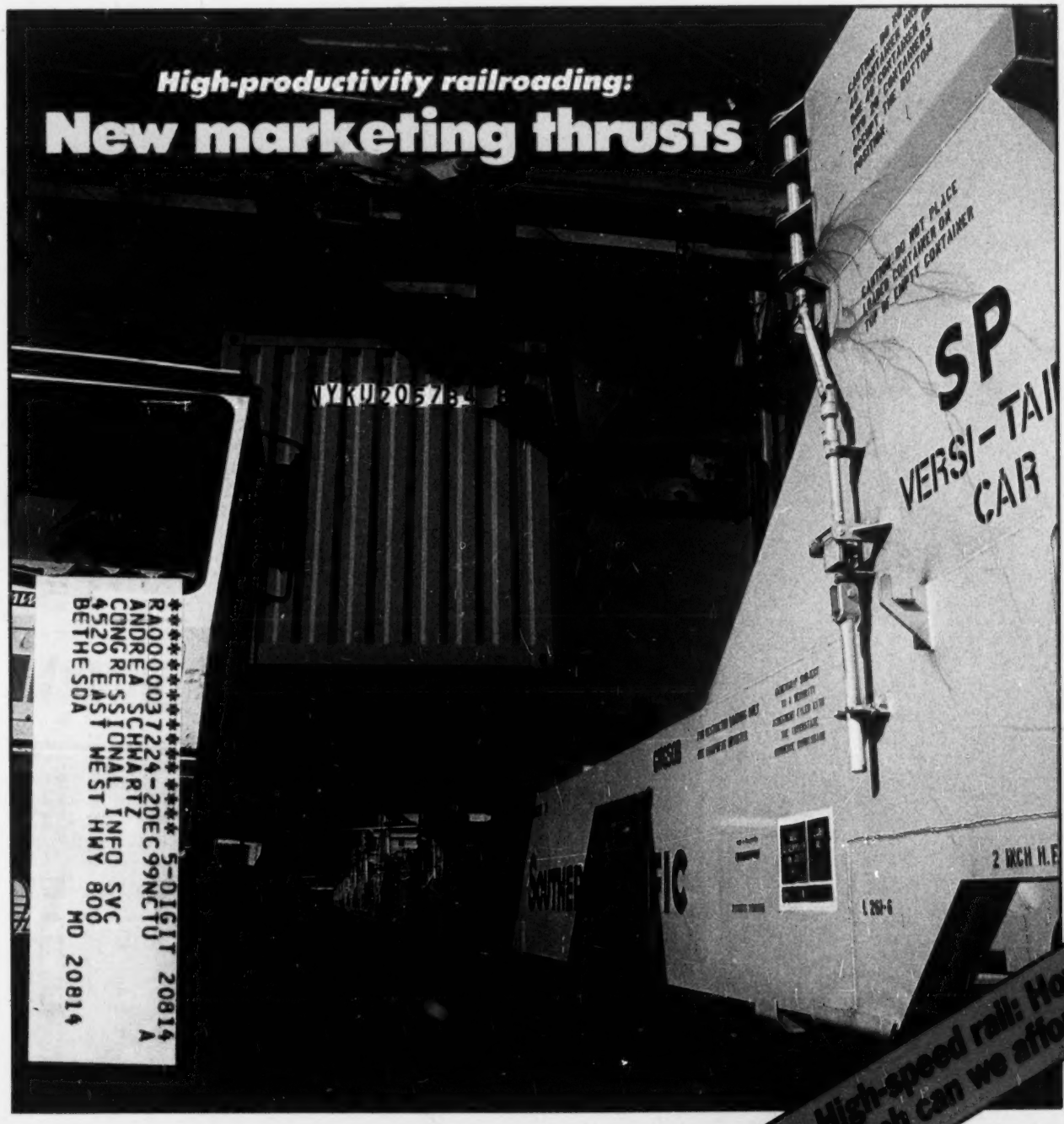
April 1986

Railway Age

...for the new age of railways


SP
VERSI-TAI
CAR
2 INCH H.E
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YKU 20578
CAUTION: DO NOT PLACE LOADED CONTAINER ON TOP OF EMPTY CONTAINER
CAUTION: ON A WELL CAR, ALL CONTAINERS MUST BE CONTAINERS OF THE SAME LENGTH. WHEN LOADING TWO CONTAINERS ON A WELL CAR, BE SURE THE BOTTOM CONTAINER IS LOADED IN THE FORWARD POSITION.
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High-productivity railroading:
New marketing thrusts

High-speed rail: How much can we afford?

April 1986

Railway Age

...for the new age of railways

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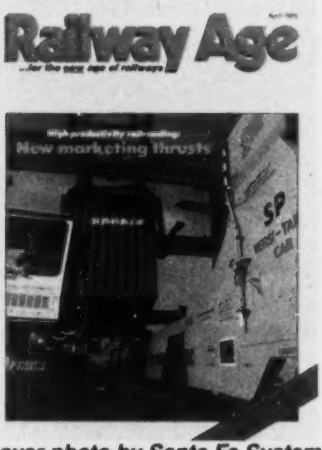

Cover photo by Santa Fe System photographer Orville Brent, Jr.

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Market Outlook

Financial

Canadian National: Is offering $100 million of eight-year notes bearing interest at an annual rate of 9⅞% in the Euro-Canadian market. Proceeds will be used for general corporate purposes, which may include capital expenditures, short term and other investments, and reduction of short term indebtedness.

Santa Fe: Plans to invest $382.1 million in railroad capital improvements in 1986, up from $379.2 million in 1985. Nearly one-third of total outlays will be for equipment. (Details p. 22)

Facilities

Caltrans: Awarded a contract to STV/Seelye Stevenson Value & Knecht for preliminary engineering design of a new centralized service, inspection and maintenance facility for Cal-Train Peninsula Commute Service. Bechtel Corp. is SSV&K's key consultant. The new facility, for which a site has not yet been selected, will consolidate various service, inspection and maintenance functions currently performed at several separate locations.

Kaoshiung (Taiwan): Engaged American Transit Consultants (ATC) to develop a preliminary implementation plan for a medium-capacity transit system. ATC includes Kaiser Engineers International, Bechtel Civil & Minerals, and Parsons Brinckerhoff International. ATC will refine an earlier study, by National Chiao Tung University's Department of Transportation Engineering and Management, which recommended a grade-separated system in downtown Kaoshiung along a 9.5-mile route.

Southeastern Pennsylvania Transportation Authority: Selected Stone & Webster Engineering Corp. to design and draw up specifications for the modernization of Wayne Junction substation, a four-year, $35-million project.

Sperry Corp.: Will supply computer systems valued at $5.8 million to two Yugoslavian railways. A $3.25-million 1100/73 multiprocessor system will go to Slovenian Railways, headquartered in Ljubliana. A $2.6-million 1100/72 system will go to Croatian Railways in Zagreb.

Revenue freight carloadings

Commodity	March 8 week	March 1 week	Feb. 22 week	Feb. 15 week
Grain	21,690	21,300	20,631	23,174
Other farm products	3,281	2,930	2,493	2,909
Metallic ores	12,600	13,260	12,232	11,399
Coal	111,769	110,576	112,815	106,248
Crushed stone, gravel and sand	11,643	10,856	9,587	8,833
Nonmetallic minerals	8,982	10,737	8,190	9,525
Grain mill products	10,811	10,662	10,454	10,892
Food and kindred products	10,647	11,139	10,208	10,875
Primary forest products	11,293	11,523	11,337	10,909
Lumber and wood products except furniture	7,863	8,506	7,440	7,403
Pulp, paper and allied products	13,537	14,183	13,814	13,497
Chemicals and allied products	25,214	26,828	24,028	24,914
Petroleum products	4,684	4,519	4,162	5,168
Stone, clay and glass products	10,102	9,501	8,718	8,525
Coke	4,837	4,855	4,704	5,002
Metals and products	8,525	9,735	8,553	8,004
Motor vehicles and equipment	23,150	23,447	23,307	22,851
Waste and scrap materials	8,644	9,058	8,472	8,713
Forwarder and shipper assn. traffic	5,654	5,822	5,101	5,764
All other carloads	65,094	65,036	57,999	60,580
LCL traffic	133	122	123	135
Total Cars Loaded	**380,153**	**384,595**	**364,368**	**365,320**
% change from previous year	(1.4)	(2.8)	(5.3)	2.4
Estimated revenue ton-miles (billions)	17.3	17.6	16.8	16.9
% change from previous year	(2.1)	(3.2)	(5.5)	0.7

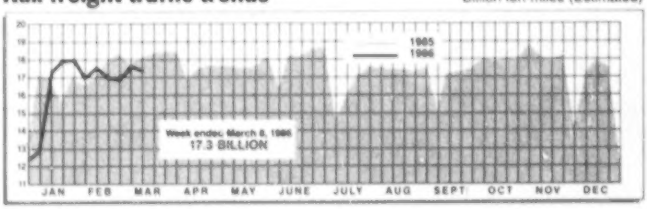
Total:	1986	1985	% change
10 weeks	169.0	165.4	2.2

Piggyback loadings

	March 1 week	Feb. 22 week	Feb. 15 week	Feb. 8 week
Trailers/containers	99,996	92,950	95,193	98,401

Cumulative total, 9 weeks		% change from 1985
Trailers/containers	827,285	13.0

Rail freight traffic trends



Source: Association of American Railroads

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	February	2 months		February	2 months		March 1,	Average Backlog	
	1986	1986	1985	1986	1986	1985	1986	1986	1985
Built new by carbuilders	544	987	1,717	1,425	1,925	1,053	2,697	2,257	3,974
Built new in RR shops	0	0	336	0	0	0	0	0	70
Built new—total	**544**	**987**	**2,053**	**1,425**	**1,925**	**1,053**	**2,697**	**2,257**	**4,044**
Rebuilt	0	0	0	50	50	0	50	25	0
TOTAL	**544**	**987**	**2,053**	**1,475**	**1,975**	**1,053**	**2,747**	**2,282**	**4,044**
Locomotives (new and rebuilt)	10	21	49	N/A	N/A	N/A	224	186	244

Source: Transportation Div., AAR and American Railway Car Institute

A RAILWAY AGE SERVICE PAGE

REVENUES AND EXPENSES OF RAILWAYS

Fourth quarter figures of calendar year 1985

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

		Operating revenues				Operating expenses													
						Way & structures			Equipment										
		Freight	Other	Total 1985	Total 1984	Total 1985	Total 1984	1985 Deprec.	Total 1985	Total 1984	1985 Deprec.	Total 1985	Total 1984	Operating Ratio 1985	Operating Ratio 1984	Income after fixed charges 1985	Income after fixed charges 1984	1985 Net Ry. operating income	Net Income 1985	Net Income 1984
Amtrak	3 mos.	—	203,007	203,007	181,107	49,036	58,448	16,585	91,810	100,026	20,972	391,675	398,610	186.01	220.00	(175,126)	(212,291)	(178,668)	(175,126)	(212,291)
	12 mos.	—	823,999	823,999	731,736	232,135	211,794	83,479	378,026	385,517	82,828	1,562,069	1,547,301	191.90	211.45	(737,180)	(791,081)	(758,070)	(737,180)	(791,081)
Atchison, Topeka & Santa Fe	3 mos.	507,845	10,7587	518,603	557,431	83,531	88,237	15,563	121,549	129,970	24,249	481,375	512,120	92.82	91.87	39,756	40,538	26,434	30,729	25,912
	12 mos.	2,099,995	44,365	2,144,360	2,305,444	339,745	343,076	59,244	500,746	535,215	96,157	1,989,150	2,083,277	92.76	90.36	162,209	209,336	119,699	125,792	135,029
Baltimore & Ohio	3 mos.	241,515	9,805	251,320	243,040	78,162	43,096	48,537	88,688	55,434	16,553	389,088	244,225	154.82	100.48	(152,001)	2,116	(80,253)	(76,719)	5,974
	12 mos.	982,980	39,284	1,022,264	1,050,805	204,591	184,715	79,584	292,794	233,980	38,586	1,133,153	984,453	110.84	94.62	(125,515)	53,921	(17,873)	(53,073)	43,656
Boston & Maine	3 mos.	26,962	1,175	28,037	29,745	3,313	4,971	277	10,003	9,287	84	28,450	30,428	101.47	102.29	1,827	(155)	(339)	1,827	(155)
	12 mos.	110,730	4,978	115,708	125,053	15,481	18,265	1,549	38,102	37,287	292	114,873	118,947	99.27	95.11	4,357	7,856	1,131	4,357	7,856
Burlington Northern	3 mos.	960,961	19,946	980,907	1,110,113	148,482	171,739	38,109	179,776	192,803	16,744	808,113	880,877	82.39	79.36	179,279	220,443	184,204	110,679	128,823
	12 mos.	3,956,485	84,055	4,040,540	4,440,241	613,208	628,450	165,996	729,087	777,873	65,456	3,281,664	3,483,153	80.72	78.67	809,130	951,319	498,296	448,510	551,323
Chesapeake & Ohio	3 mos.	240,662	9,167	249,829	204,068	63,958	30,005	41,207	103,983	50,183	34,668	428,749	212,093	171.61	103.93	(263,023)	445	(87,347)	(171,459)	2,214
	12 mos.	986,853	34,034	1,020,887	1,050,474	166,021	140,606	68,303	262,465	233,667	46,236	1,058,215	908,906	103.65	86.52	(95,300)	204,446	(1,060)	(59,061)	142,346
Chicago & North Western	3 mos.	178,820	26,442	205,262	205,579	39,887	34,310	5,205	50,589	50,255	3,501	202,709	199,676	98.75	97.12	(1,072)	(11,830)	6,885	(21,404)	(9,955)
	12 mos.	721,428	102,233	825,861	882,060	153,210	130,546	24,539	196,624	212,448	15,375	801,000	819,966	97.24	92.96	(11,349)	23,799	28,992	(26,067)	20,899
Conrail	3 mos.	742,047	28,139	770,186	782,345	104,912	117,326	23,296	173,329	186,794	35,362	670,329	721,009	87.03	92.15	112,066	89,529	85,648	112,066	89,529
	12 mos.	3,039,311	114,337	3,153,648	3,321,620	454,978	484,448	90,623	698,106	749,175	140,354	2,763,831	2,872,095	86.63	86.46	441,809	500,173	309,064	441,809	500,173
Delaware & Hudson	3 mos.	27,039	286	27,325	28,977	5,148	5,282	276	8,546	9,386	137	28,027	32,522	102.58	112.23	(790)	(3,740)	(988)	(790)	(3,740)
	12 mos.	109,125	1,515	109,640	123,282	19,216	21,279	1,071	32,820	38,006	583	112,311	128,276	102.43	104.11	(3,247)	(6,537)	(2,996)	(3,247)	(6,537)
Denver & Rio Grande Western	3 mos.	76,085	1,406	77,491	85,289	12,390	17,966	3,649	13,914	16,098	3,324	67,692	79,112	87.35	92.75	11,837	6,169	5,053	6,929	5,785
	12 mos.	320,254	5,209	325,463	358,373	50,369	60,352	14,459	59,458	68,555	13,293	287,134	324,696	88.22	90.60	39,416	31,873	23,495	24,051	23,150
Elgin, Joliet & Eastern	3 mos.	13,818	5,862	19,680	18,220	3,549	3,220	996	3,506	3,077	1,969	20,890	18,767	106.14	103.00	334	232	(1,329)	215	(186)
	12 mos.	59,455	25,532	84,987	90,245	14,245	14,481	2,395	13,792	13,895	7,976	83,137	83,088	97.82	92.06	8,113	12,884	(1,273)	4,580	7,448
Florida East Coast	3 mos.	30,855	734	31,589	32,832	3,785	5,111	1,221	5,062	4,995	1,187	22,774	24,020	72.09	73.16	10,823	9,712	4,535	6,543	5,915
	12 mos.	115,558	2,230	117,788	121,479	18,013	17,849	4,904	21,762	19,831	4,652	91,441	89,560	77.63	73.72	40,695	45,005	9,284	23,632	26,865
Grand Trunk Western	3 mos.	84,548	3,332	87,880	89,767	11,278	9,373	1,889	17,436	17,980	1,575	85,901	82,575	97.96	91.76	1,264	6,044	1,366	2,256	7,685
	12 mos.	329,308	13,639	342,947	341,118	42,874	40,219	6,554	71,072	74,875	6,491	338,118	331,006	96.59	97.03	951	3,267	6,284	6,190	7,536

Illinois Central Gulf	3 mos.	190,827	17,251	208,078	229,797	26,355	22,338	10,845	59,634	73,360	5,683	196,732	216,938	94.54	94.40	20,152	5,916	6,879	16,903	7,054				
	12 mos.	807,879	72,639	880,518	954,689	115,202	111,258	45,702	261,530	283,881	20,911	836,747	892,102	95.02	93.44	36,840	71,787	33,256	29,368	62,353				
Kansas City Southern	**3 mos.**	**71,808**	**3,732**	**75,540**	**83,344**	**13,009**	**11,343**	**3,791**	**16,086**	**16,902**	**5,235**	**64,602**	**67,206**	**85.52**	**80.63**	**9,268**	**14,763**	**7,332**	**5,534**	**8,851**				
	12 mos.	**302,180**	**14,524**	**316,704**	**331,480**	**48,882**	**47,776**	**14,763**	**68,982**	**73,251**	**21,380**	**270,164**	**277,042**	**85.30**	**83.58**	**39,387**	**47,427**	**31,444**	**23,782**	**29,567**				
Missouri-Kansas-Texas	3 mos.	55,164	2,492	57,656	63,011	10,152	12,821	2,970	13,148	13,952	2,260	57,412	60,690	99.57	96.31	(4,108)	(877)	675	(3,136)	(77)				
	12 mos.	251,483	11,619	263,102	275,564	49,311	52,985	10,612	62,137	65,782	7,555	251,483	259,399	95.58	94.13	(54)	7,057	7,331	(5,681)	7,857				
Missouri Pacific	**3 mos.**	**367,978**	**12,759**	**400,737**	**439,228**	**49,367**	**68,276**	**13,057**	**94,502**	**99,088**	**19,256**	**362,878**	**419,516**	**90.56**	**85.72**	**18,764**	**25,700**	**50,281**	**35,888**	**23,299**				
	12 mos.	**1,607,999**	**47,996**	**1,655,995**	**1,795,227**	**234,801**	**262,484**	**50,983**	**397,076**	**398,052**	**74,915**	**1,544,635**	**1,606,604**	**93.27**	**88.60**	**49,827**	**177,867**	**141,711**	**71,017**	**129,916**				
Norfolk & Western	3 mos.	418,844	15,162	434,026	364,220	65,237	58,016	12,588	88,379	64,507	11,27	964	310,641	81.25	85.28	102,861	68,262	42,687	62,369	46,017				
	12 mos.	1,655,060	65,796	1,720,856	1,716,156	249,728	270,100	44,958	348,335	317,995	50,9	93	1,366,291	79.37	79.61	408,550	457,078	170,397	281,306	263,918				
St. Louis Southwestern	**3 mos.**	**93,687**	**1,640**	**95,336**	**104,388**	**16,444**	**13,741**	**4,430**	**21,735**	**26,395**	**5.**	**3**	**94,265**	**89.93**	**89.78**	**10,528**	**19,777**	**6,763**	**7,668**	**16,150**				
	12 mos.	**363,686**	**6,302**	**390,088**	**438,211**	**59,773**	**55,349**	**17,957**	**98,626**	**110,242**	**21,6**	**228**	**394,047**	**92.85**	**90.33**	**31,813**	**61,434**	**17,276**	**31,229**	**44,566**				
Seaboard	3 mos.	633,571	12,644	646,215	673,774	253,143	86,528	176,381	245,210	168,795	64,548	948,112	594,529	146.07	88.02	(345,240)	75,375		(196,056)	45,327				
	12 mos.	2,584,369	60,624	2,644,993	2,765,804	540,764	345,205	232,549	746,809	679,928	97,220	2,684,530	2,387,148	101.05	85.07	(87,417)	369,261	(140,007)	(14,677)	246,315				
Soo Line	**3 mos.**	**151,226**	**5,905**	**157,131**	**77,872**	**34,152**	**15,001**	**8,538**	**41,081**	**19,023**	**3,010**	**159,582**	**72,229**	**101.55**	**92.75**	**6,572**	**6,811**	**(3,970)**	**4,576**	**4,040**				
	12 mos.	**580,776**	**19,597**	**600,373**	**319,524**	**124,691**	**61,626**	**27,245**	**151,848**	**72,688**	**13,205**	**597,922**	**282,301**	**99.59**	**92.63**	**(10,646)**	**29,613**	**13,102**	**(2,056)**	**18,002**				
Southern	3 mos.	410,785	9,229	420,014	445,943	52,876	43,059	11,261	82,677	77,695	19,591	334,528	326,290	79.64	73.16	90,381	113,863	48,664	52,736	62,457				
	12 mos.	1,665,005	39,333	1,704,338	1,795,407	238,694	234,412	67,018	350,514	349,526	76,887	1,365,735	1,406,251	78.32	78.32	341,018	367,636	210,189	207,687	221,125				
Southern Pacific	**3 mos.**	**466,286**	**16,857**	**483,245**	**537,632**	**84,060**	**67,585**	**23,078**	**132,253**	**147,224**	**19,432**	**486,523**	**530,515**	**100.67**	**98.67**	**45,955**	**41,839**	**12,969**	**61,802**	**54,355**				
	12 mos.	**1,969,494**	**64,306**	**2,053,880**	**2,198,563**	**270,290**	**239,906**	**82,573**	**565,914**	**626,734**	**79,457**	**2,064,407**	**2,172,973**	**100.51**	**99.28**	**89,546**	**68,082**	**16,344**	**116,976**	**137,199**				
Union Pacific	3 mos.	472,634	5,781	478,415	487,418	71,210	84,541	17,769	93,010	109,807	22,191	403,566	440,023	84.35	90.27	86,088	48,506	43,238	54,435	32,765				
	12 mos.	1,875,105	21,781	1,896,886	1,920,860	285,019	299,479	69,362	374,162	430,281	90,248	1,639,031	1,725,940	86.40	89.85	267,639	183,754	157,560	167,145	122,690				
Western Pacific	**3 mos.**	**39,924**	**610**	**40,734**	**30,883**	**7,637**	**6,856**	**1,305**	**9,534**	**8,933**	**702**	**50,085**	**40,297**	**122.90**	**131.33**	**(9,824)**	**(7,734)**	**(2,884)**	**(3,483)**	**572**				
	12 mos.	**154,135**	**2,680**	**156,815**	**146,740**	**29,848**	**27,467**	**4,280**	**37,682**	**33,314**	**3,840**	**184,325**	**163,315**	**117.54**	**111.29**	**(34,216)**	**(23,632)**	**(8,449)**	**(13,155)**	**(8,826)**				

Source: Interstate Commerce Commission

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May 1986

Railway Age

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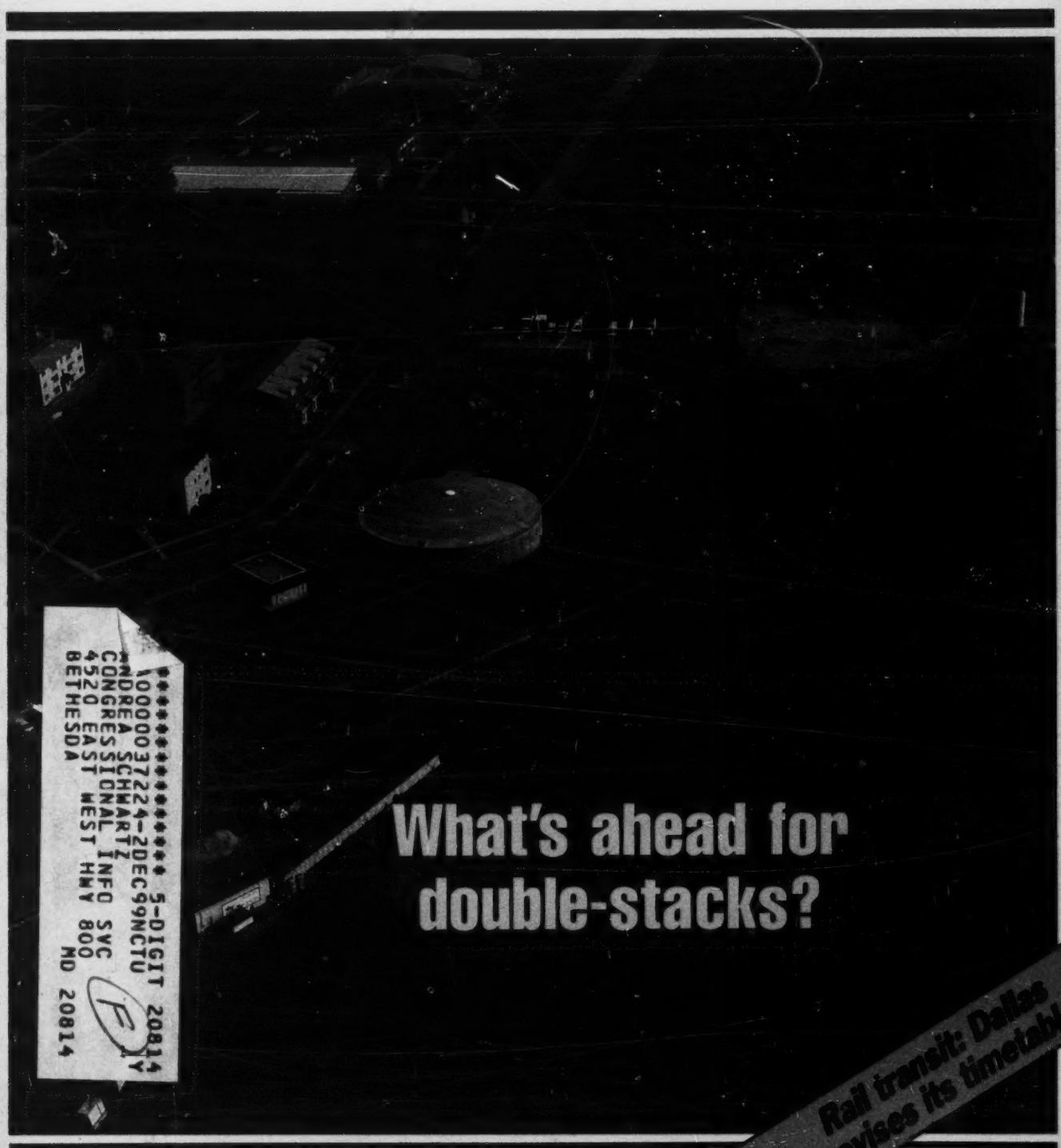

What's ahead for double-stacks?

Rail transit: Dallas revises its timetable

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Railway Age
...for the new age of railways

May 1986

Features

32 High-productivity railroading: Keeping rolling stock rolling

Railroads are producing more ton-miles with fewer cars and locomotives. As existing equipment works harder, the question of investing in replacement fleets could become more urgent.

36 What's ahead for double-stacks?

More growth is in the cards—but how much growth depends on a number of imponderables, including the profitability of these container-on-container trains.

40 High-tech loaders lift terminal efficiency

In a time of rapid change, the optimum shape of tomorrow's intermodal terminal is still unknown. But the need for efficient lift equipment is clear, and suppliers are rising to the challenge.

43 Prolonging crosstie life

With ties carrying an increasingly heavy burden (and a hefty m/w price tag) the search for ways to extend their life is intensifying.

57 Cleveland: An end to Red Line blues?

Will a thorough rehabilitation and a new fleet of cars bring new life to a line that has lost half its riders? Cleveland's RTA hopes so.

63 Dallas: A new timetable for DART

A reappraisal of the master plan may result in some delays and cost-saving realignments—but Dallas still hopes to put in 147 miles of "pre-metro" rail.

Conrail speeds an APL Linertrain from Chicago to the East Coast. Conrail photo by Don O'Barsky.

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54 NJ Transit order goes to Bombardier

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Market Outlook

Equipment

American Maize Products Co.: Acquired 20 5,650-cubic-foot-capacity covered hopper cars from Pullman Leasing Co., for shipment of corn-gluten feed pellets. The cars are re-engineered and rebuilt 4,750-cubic-foot-capacity covered hoppers. Re-engineering included a mechanical "re-work," installation of trough hatches instead of circular hatches and gravity outlet gates instead of roto-tube gates, and repainting. Earlier, PL supplied 40 re-engineered cars to Genstar Cement Co. (*RA*, Feb., p. 14).

Bombardier, Inc.: Has acquired 45% of the capital stock of the Belgian company, Constructions Ferroviaires et Metalliques BN (formerly Brugeoise et Nivelles). Bombardier thus becomes the principal stockholder of the Belgian manufacturer of railroad transit and freight equipment. Since 1979, Bombardier has held North American rights for such BN-designed equipment as the light rail vehicles recently delivered to Portland, Ore.

GO Transit (Toronto): Ordered 83 bi-level cars, including 56 coaches and seven cab cars, from Urban Transportation Development Corp., for delivery in late 1987. GO will use the equipment, its third generation of bi-levels, to expand commuter service. The order is valued at $82.3 million (Canadian).

Los Angeles County Transportation Commission: Awarded the first major contract for the 21.5-mile, $690-million Los Angeles to Long Beach light-rail transit project. The contract, which went to the Pomona Valley Equipment Co. of Huntington Beach, calls for demolition and removal of an 850-foot ex-Southern Pacific bridge over the Los Angeles River in north Long Beach; LATC will build a new bridge to meet current seismic standards.

New Jersey Transit: Awarded a $100-million (Canadian) order to Bombardier for 20 new commuter cars, similar to 117 previously supplied, and the overhaul of 147 cars. The new cars will be manufactured at Bombardier's La Pocatiere, Que., plant, with final assembly at the builder's Barre, Vt., facility.

Revenue freight carloadings

Commodity	April 5 week	March 29 week	March 22 week	March 15 week
Grain	19,213	18,073	20,596	21,900
Other farm products	2,821	2,732	2,763	2,939
Metallic ores	13,086	14,692	15,558	15,362
Coal	100,052	107,908	113,430	116,405
Crushed stone, gravel and sand	13,459	12,997	11,992	11,961
Nonmetallic minerals	8,675	8,152	9,155	9,890
Grain mill products	10,200	9,607	10,108	10,719
Food and kindred products	10,794	10,880	10,820	11,142
Primary forest products	10,242	10,111	10,541	10,525
Lumber and wood products except furniture	8,129	8,578	8,466	8,010
Pulp, paper and allied products	12,847	13,054	13,043	13,349
Chemicals and allied products	27,770	24,641	25,813	26,935
Petroleum products	4,429	3,781	4,347	4,464
Stone, clay and glass products	10,331	9,733	9,514	9,868
Coke	4,847	3,975	4,640	4,845
Metals and products	9,340	9,475	8,616	8,426
Motor vehicles and equipment	18,096	19,120	22,190	23,250
Waste and scrap materials	8,125	7,707	8,511	8,727
Forwarder and shipper assn. traffic	5,331	5,533	5,593	5,548
All other carloads	61,963	64,014	64,166	65,318
LCL traffic	117	103	142	127
Total Cars Loaded	**359,867**	**364,866**	**380,804**	**389,710**
% change from previous year	(1.8)	(8.5)	(4.7)	1.9
Estimated revenue ton-miles (billions)	16.4	16.6	17.4	17.8
% change from previous year	1.0	(9.8)	(5.0)	(2.8)

Total:	**1986**	**1985**	**% change**
14 weeks	237.3	236.7	0.2

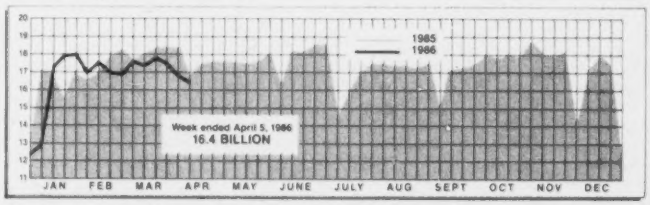
Piggyback loadings

	March 29 week	March 22 week	March 15 week	March 8 week
Trailers/containers	97,549	99,420	99,423	99,418

Cumulative total, 13 weeks		**% change from 1985**
Trailers/containers	1,222,801	12.7

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED March 1986	DELIVERED 3 months 1986	DELIVERED 3 months 1985	ORDERED March 1986	ORDERED 3 months 1986	ORDERED 3 months 1985	ON ORDER AND UNDELIVERED April 1, 1986	Average Backlog 1986	Average Backlog 1985
Built new by carbuilders	574	1,561	2,585	1,252	3,177	2,606	3,375	2,629	4,169
Built new in RR shops	0	0	336	0	0	0	0	0	70
Built new—total	**574**	**1,561**	**2,921**	**1,252**	**3,177**	**2,606**	**3,375**	**2,629**	**4,239**
Rebuilt	50	50	0	0	50	0	0	17	0
TOTAL	**624**	**1,611**	**2,921**	**1,252**	**3,227**	**2,606**	**3,375**	**2,646**	**4,239**
Locomotives (new and rebuilt)	37	58	97	N/A	N/A	N/A	199	190	254

Source: Transportation Div., AAR and American Railway Car Institute

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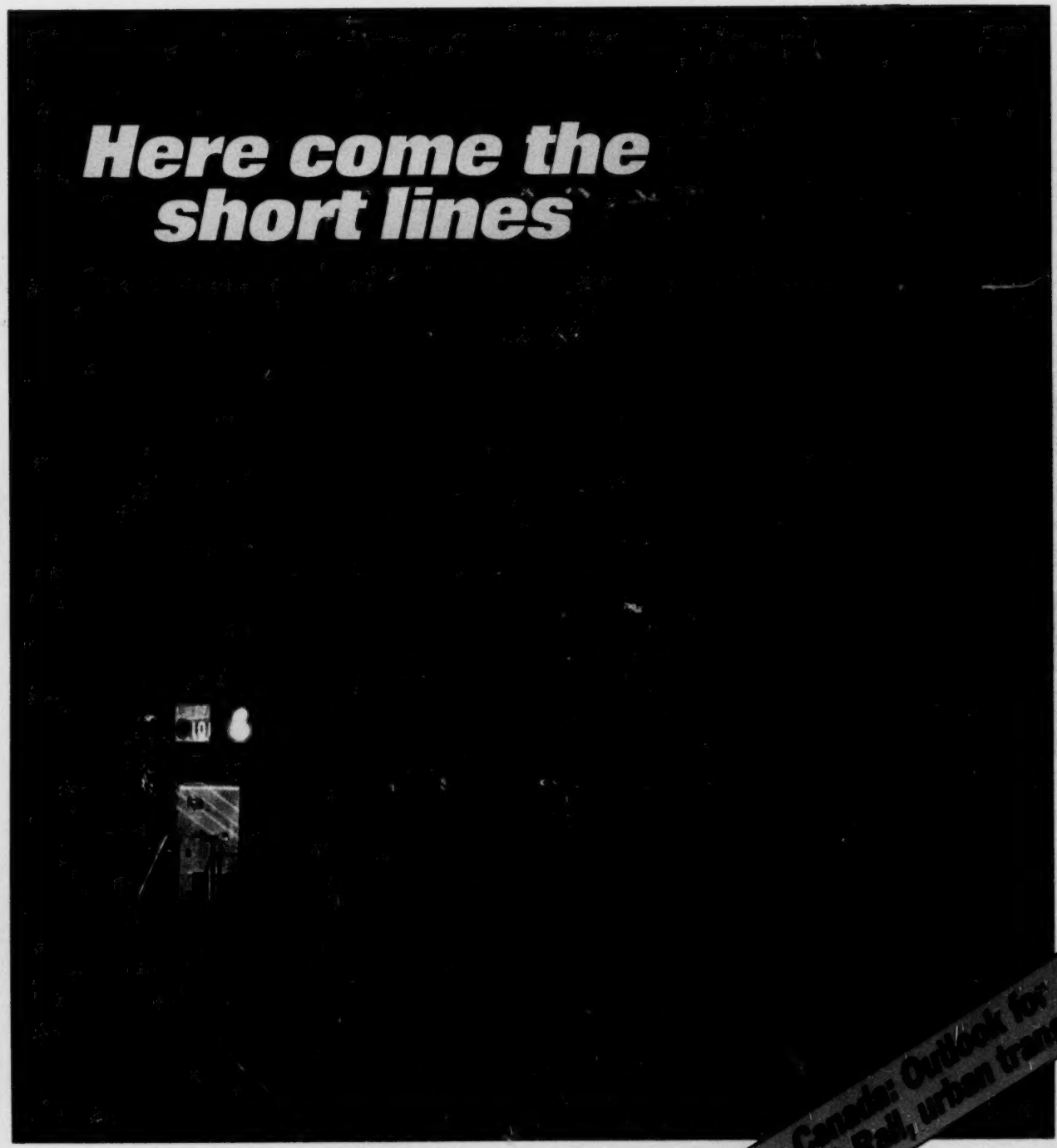
June 1986

Railway Age

...for the new age of railways

Here come the short lines



Canada: Outlook for VIA Rail, urban transit

Railway Age
...for the new age of railways

June 1986

Features

31 High-productivity railroading: The "people" factor

Management and labor have tacitly agreed on the need for improved productivity. Can they now move from the tacit to the explicit before they are overtaken by more productive competitors?

35 Here come the short lines

The 400-plus short lines now in business have shown that they can provide regional service more cheaply and efficiently than the line-haul carriers; as a result, their ranks keep growing.

44 HPIT: Many questions, few answers

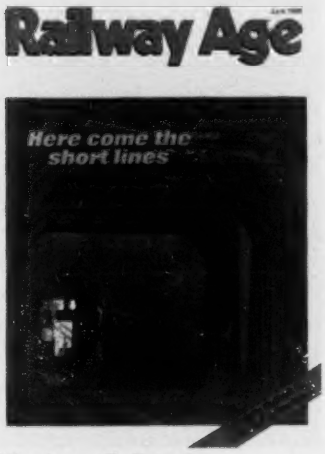
The High-Productivity Integral Train Project needs more R&D money, and greater assurance that railroads will be willing to buy the end products, before it really takes off. But it's beginning to move.

47 Sand: There's still no substitute

It can foul ballast, and it can prove to be abrasive in the trackwork. But sand continues to be essential to improve locomotive traction, just as it has been for the last 140 years.

64 Canada marks a milestone

A century and a half after the first passenger trains operated in Canada, Expo 86's SkyTrain is reminding Canadians of the important role passenger railroading still plays in their daily lives.



Allegheny Railroad photo by Kent Patterson

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Equipment

Amtrak: Is acquiring 74 new headend cars (50 ordered last year, and an additional 24 approved by the Amtrak board in March) at a cost of about $7 million. All to be delivered by July 1, the 61-foot cars have floors that can accommodate a heavy forklift which will enable Amtrak to compete for package business. Assembled at Thrall's Cartersville, Ga., plant, the cars have new Thrall-built bodies and BX trucks (Railway Express design) rebuilt at Amtrak's Beech Grove, Ind., shop. "These cars put us into a new category of construction," said a Thrall spokesman. "They look like boxcars on the inside and passenger-train cars on the outside." Amtrak's mail and express revenues in FY 1985 totaled $24.5 million, up from $17.5 million in FY 1984.

Massachusetts Bay Transportation Authority: A $12-million contract has been awarded to Westinghouse Electric for the supply of propulsion and auxiliary electrical equipment for 50 light rail cars that MBTA ordered earlier this year from Kinko Sharyo of Japan through C. Itoh (America), a trading company. Total value of the 50-car order (which supplements an earlier order for 50 cars now being delivered) is $60 million.

Southern Pacific: Will lease 300 new 100-ton-capacity bulkhead flatcars from Trailer Train for movement of lumber from the Pacific Northwest to Texas, Arizona and southern California. On order from Gunderson for July delivery, the cars weigh less than standard bulkhead cars but carry up to 25 tons more payload because of their upright center I-beam design. Also to be delivered to SP in July are 50 new 48-foot-long, 102-inch-wide intermodal containers that are being acquired from Flexi-Van; SP will load these as top units on double-stack cars.

Facilities

PATH: Directors have earmarked $5.7 million for preliminary design and property negotiations for a new car shop and yard in Harrison, N.J., that will replace a 75-year-old shop/yard complex in Jersey City. The new facility is to be in operation in 1991.

Revenue freight carloadings

Commodity	May 10 week	May 3 week	April 26 week	April 19 week
Grain	15,478	17,593	17,001	17,902
Other farm products	3,493	3,057	2,909	2,862
Metallic ores	16,982	14,668	17,094	16,534
Coal	107,903	111,030	112,483	112,079
Crushed stone, gravel and sand	15,154	14,645	15,297	14,161
Nonmetallic minerals	9,947	10,348	9,760	10,178
Grain mill products	10,418	10,109	10,173	9,908
Food and kindred products	10,691	11,326	11,122	11,138
Primary forest products	10,236	9,882	10,133	10,119
Lumber and wood products except furniture	7,966	8,505	8,450	8,473
Pulp, paper and allied products	12,393	12,868	12,352	12,234
Chemicals and allied products	25,708	25,361	25,795	26,547
Petroleum products	4,745	4,742	4,727	4,714
Stone, clay and glass products	10,450	10,885	10,552	10,754
Coke	5,077	5,265	4,854	5,179
Metals and products	8,582	9,458	8,600	8,234
Motor vehicles and equipment	21,602	22,136	22,867	22,910
Waste and scrap materials	8,171	8,315	8,538	8,907
Forwarder and shipper assn. traffic	2,787	3,256	3,182	5,487
All other carloads	73,036	71,331	67,599	65,372
LCL traffic	102	103	107	234
Total Cars Loaded	**380,921**	**384,886**	**383,595**	**383,926**
% change from previous year	(0.5)	(1.3)	(2.0)	(2.2)
Estimated revenue ton-miles (billions)	17.0	17.1	16.9	16.9
% change from previous year	0.2	(0.2)	(1.6)	(1.7)

Total:	1986	1985	% change
19 weeks	322.7	322.2	0.2

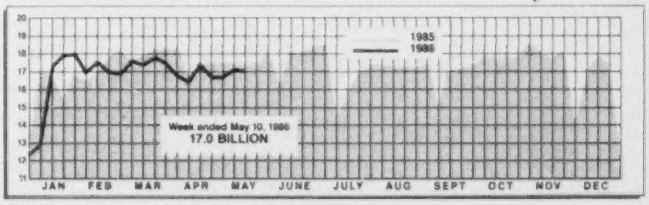
Piggyback loadings

	May 3 week	April 26 week	April 19 week	April 12 week
Trailers/containers	92,117	100,341	99,982	99,001

Cumulative total, 18 weeks		% change from 1985
Trailers/containers	1,735,669	14.8

Rail freight traffic trends

Billion ton-miles (Estimated)

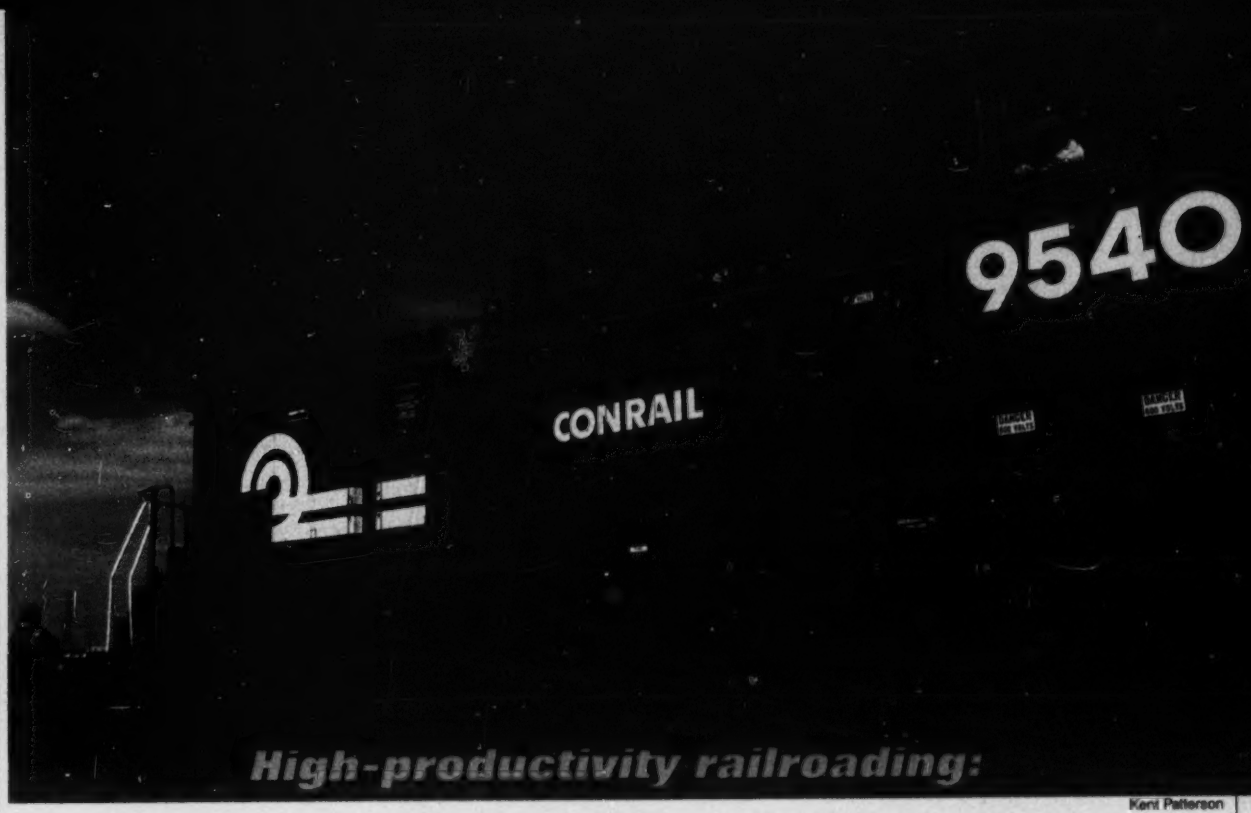


Source: Association of American Railroads

Freight cars

	DELIVERED			ORDERED			ON ORDER AND UNDELIVERED		
	April	4 months		April	4 months		May 1,	Average Backlog	
	1986	1986	1985	1986	1986	1985	1986	1986	1985
Built new by carbuilders	607	2,168	3,564	1,850	5,027	3,422	4,618	3,127	4,226
Built new in RR shops	0	0	336	0	0	0	0	0	70
Built new—total	**607**	**2,168**	**3,900**	**1,850**	**5,027**	**3,422**	**4,618**	**3,127**	**4,296**
Rebuilt	0	50	0	0	50	0	0	12	0
TOTAL	**607**	**2,218**	**3,900**	**1,850**	**5,077**	**3,422**	**4,618**	**3,139**	**4,296**
Locomotives (new and rebuilt)	76	134	135	N/A	N/A	N/A	190	190	256

Source: Transportation Div., AAR and American Railway Car Institute



Kent Patterson

High-productivity railroading:

The "people" factor

By GUS WELTY,
Senior Editor

Rail management and labor have been late in agreeing on ways to improve productivity. Competition, today, requires that they move more quickly and in a more positive fashion.

Conrail, once the "worst case" among major railroads in labor costs, is now more in line with the industry average—a main reason for its move from red to black ink. But all railroads must become less labor intensive if they are to survive in a capital intensive business.

All in all, it was a pretty straightforward proposition, or so it seemed.

Santa Fe was scheduled to operate a RoadRailer test for General Motors, Chicago to near Los Angeles and back. The consist would be a single locomotive unit and 31 RoadRailers. Westbound, the RoadRailers would haul motor vehicle parts. Eastbound, some of the units would carry set-up vehicles.

It was to be a one-shot, out-and-back operation.

It was to be a demonstration of capability using the RoadRailer equipment, one aimed at gaining new business and at retaining business that conceivably could be lost.

Santa Fe wanted to run the train with a two-man crew, just as Burlington Northern had been operating RoadRailer trains in another test for GM between Chicago and St. Louis. Santa Fe also wanted to operate over extended districts.

So, Santa Fe presented its case to the operating unions.

Representatives of the Brotherhood of Locomotive Engineers agreed. Most representatives of the United Transportation Union also agreed—most, but not all, with extended districts apparently being the sticking point.

Obviously, in such a situation, a railroad gets unanimity or it has nothing. In this case, Santa Fe had nothing, and so it decided to run the test train with supervisory personnel.

The unions went on strike, but the train ran. GM pronounced the test "highly successful," and that it was. Santa Fe completed the westbound run in 45 hours, 19 minutes including delivery by Southern Pacific via an interchange at Colton, Calif.

But that's not the end of the story.

Most often, in such circumstances, a railroad will head for a federal district court for a temporary restraining order to end the strike. Santa Fe didn't.

With the operating unions on strike and with most other employees honoring picket lines, Santa Fe kept right on operating.

Currently, the road's management-supervisory force numbers about 3,500 persons. About 20,000 persons are covered by union contracts.

Eventually, the walkout ended. The unions, perhaps perplexed by Santa Fe's tough stance, finally went to court themselves and an out-of-court settlement ensued.

But the strike lasted from a Saturday into the following Thursday. During that period, using supervisory personnel, Santa Fe handled about 80% of normal traffic, measured in cars originated and received from connections. Its supervisory forces were, to say the least, productive, and not just where main line traffic was concerned. As one example, a single supervisory crew serviced three branch lines in a day, a task that normally would have required three crews.

And as a footnote, at the Colton interchange, SP union crews took the RoadRailer train and delivered it with a two-man crew and without batting an eye.

Productivity.

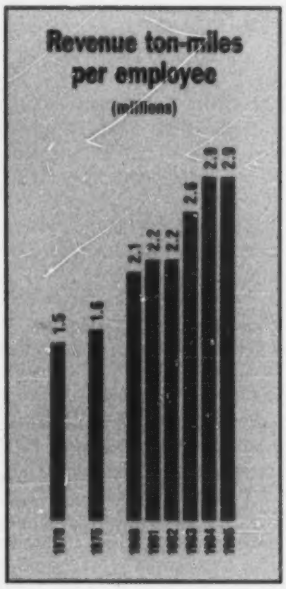
Many years ago, Florida East Coast showed what could be done if a railroad was willing to pay the cost of taking a strike and holding its position.

In the late 1970s, Norfolk & Western operated for close to three months while the Brotherhood of Railway and Airline Clerks was on strike.

Maine Central and other Guilford Transporta-

Freight traffic: Ups and downs

	Carloadings	Ton-miles	Originated Tonnage
1970	27.1 million	764 billion	1.48 billion
1975	23.2	754	1.39
1980	22.6	918	1.49
1981	21.6	910	1.45
1982	18.5	797	1.26
1983	18.8	828	1.29
1984	20.2	921	1.43
1985	19.4	875	1.32



tion Industries railroads have kept on running since early March when the Brotherhood of Maintenance of Way Employes struck MEC.

And now Santa Fe. In times past, Santa Fe has not had a reputation as a tough railroad in the labor context. Now it does.

New-breed short lines are also showing what can happen when improved productivity is cranked into a railroad operation. Some of these new railroads are non-union, some have negotiated agreements more favorable than those in existence when the short line was a trunk line's branch line. Many and perhaps most of these new carriers will make it, maintaining service for shippers, providing jobs and turning a profit for their owners. They're going to make it with segments of track that were consistent losers for former owners, segments of track that would otherwise have gone up for abandonment. Is it magic? Not really. It's productivity.

Consider again the trunk lines.

If you go back five, 10, 20 years and merely look at the numbers, you come away with a feeling that major railroads have made tremendous strides in improving productivity.

The most simplistic comparisons involve service and employment. Railroad revenue freight ton-miles are up, railroad employment is down. Railroads are producing more ton-miles per employee.

In a vacuum, the numbers might represent "tremendous strides" in improving productivity.

The problem is that railroads do not operate in a vacuum. Motor carriers, deregulated to an even greater extent than railroads, have made their own tremendous strides. Motor carriers have had legislative help, allowing increases in truck length, width and weight. Motor carriers have also had labor's help, in the forms of wage/benefit concessions and relaxation of work rules.

Aside from the partial deregulation provided under the Staggers Act of 1980, railroads have had no legislative help. Within the limitations of track gauge, clearance diagrams and weight-on-rails, railroads have improved their productive capability by spending money for such big-ticket items as higher-horsepower and more fuel-efficient locomotives, higher-capacity freight cars, more efficient track-maintenance machines.

Productivity improvements have come largely from the capital side.

But for railroads, unlike for motor carriers, there have been no concessions on wages or benefits.

And it was not until the signing of agreements with the United Transportation Union late last year and with the Brotherhood of Railway and Airline Clerks earlier this year that anything meaningful took place in terms of work rules or of contract provisions covering new employees.

In fact, it was not until the 1985 agreement with the UTU that the railroad industry finally got in place the procedures for the eventual elimination of the locomotive fireman's job, decades after the steam locomotive ceased to exist for anything more than railfan trips.

The UTU agreement did freeze arbitraries and it eliminated them for new hires. It put restrictions on the application of cost-of-living increases, tying them to scheduled basic wage increases. It created a two-tier wage system for present employees and new hires, but one in which new employees will eventually reach full scale. It left intact the 100-mile day, except that the basic "day" will go up in increments of two miles each year for the life of the agreement. Earlier, Amtrak won an eight-hour-day provision for certain operations; the best the freight railroads could do was that modest increase in mileage for a "day."

The BRAC agreement went somewhat further. It provided for greater flexibility for railroads operating in the electronic era. Significantly, it reflected BRAC's recognition of the potential in intermodal operations, with intermodal terminal positions to be rated for new hires at 75% of present rates and with new employees to be brought in at 75% of those new rates.

Ironically, the UTU agreement was once rejected in a referendum, apparently because of a misunderstanding as to how firemen's jobs would be eliminated, while the BRAC agreement was overwhelmingly approved in a membership vote the first time around.

One agreement still protected employees in an obsolete craft, while the other recognized the need to bring scales more into line with competitive reality. The whole affair recalled a comment made many years ago by a union vice president, to the effect that his union had enough to worry about without being overly concerned with "unborn generations."

The irony is that the comment was made by a UTU vice president, from the union that has given ground so grudgingly in the whole fireman-off dispute, backing the former Brotherhood of Locomotive Firemen & Enginemen in the battle which began in 1959 and fighting to maintain the position after the four-union merger which created UTU a decade later.

The UTU and BRAC agreements run into 1988. Presumably agreements with other rail unions will have a like life-span.

The question is, the questions are, what happens then? Will it be business-as-usual again? Can railroads afford to have it be business-as-usual again?

In order to be competitive from a labor-cost standpoint, there are certain things that railroads need.

One is the elimination of the caboose from most

if not all operations. The new agreement with UTU provides greater freedom for carriers to run unit trains and trains that are predominantly intermodal without a caboose, but that freedom should be expanded.

A second is that in most circumstances a two-man train crew should become the standard. Local freight trains, peddlers, probably need extra personnel because of the switching involved. But through freight trains, operating between terminals, can run quite nicely with an engineer and a conductor.

A third is that still more flexibility is needed in BRAC's domain in order to take maximum advantage of the opportunities presented by the electronic era.

A fourth is that the whole nature of train dispatching and control has to change, in the labor context, whether control comes via satellite transmissions or by closer-to-the-ground electronics.

A fifth is that maintenance of both plant and equipment will have to be made less costly. In maintenance-of-way, that means not just more mechanization but more automation of the sort pioneered by Southern. In equipment maintenance, that means transition to the composite mechanic, the skilled employee who can do the whole job; it also means the end to contract restrictions which may require use of employees represented by three or four different crafts to handle a task that one employee could do.

Rail labor cannot be expected to respond in a positive way to these needs, based upon history.

But interesting things have been happening within labor's ranks, and they are not limited to the moderate concessions contained in the UTU and BRAC agreements.

UTU is now publicly saying that it believes that a single rail union would serve labor's purposes best.

BRAC has proposed the creation of a railroad department within the AFL-CIO.

Neither of these developments is likely to take place soon, especially since UTU has withdrawn from the federation, citing "irreconcilable differences," which included disputes over the organizing of Amtrak employees and the organizing of short line workers. But it is encouraging in a sense at least that the two largest rail unions are both thinking in terms of consolidation in one form or another.

At some point, too, with employment declining and costs of union operation rising, more of the industry's smaller unions will have to think about affiliation with bigger organizations. And at some point, those employees whose rail divisions are but a tiny part of a larger union—the Machinists, Electricians and Sheet Metal Workers, for example—may realize that their fortunes could be better protected if they were members of "a" union rather than being appendages to unions whose major interests lie elsewhere.

It has been said many times that the main reasons for productivity increases in railroading have come because railroads were willing to make capital investments which, in most recent years, have exceeded retained earnings.

Railroads are capital intensive.

To an even greater extent, they have been labor-intensive.

Railroad employees, meanwhile, have job protection that employees in few other industries can claim.

Railroad unions are insulated, in a way, each union with its own fiefdom, each union with its hierarchy of officers. Even the union created in a big merger, UTU, is still a union fragmented; the only way the merger could have taken place was for each of the four amalgamating organizations to retain automony of craft and the result has been a lot less than what a strong union leader would want in terms of his being able to manage a labor organization.

It is not fair to blame rail labor organizations for all the problems that have faced and still face the railroad industry.

It is not fair to say that if there were no unions, trunk line railroads would immediately fare a lot better.

It is not fair to say that if rail management had been able to get its way in 1959 with the "management shall have the unilateral right to..." notices, railroad fortunes would be just that today.

Over the years, rail management has made its share of blunders, and it is far from perfect today.

Rail management failures have not been uncommon, and the list is not limited to Penn Central or, with the help of the Interstate Commerce Commission, Rock Island.

Rail management, for the most part, however, has been competent and it has tried.

One longtime industry observer has said that the people who run today's railroads could never have built them. But that borders on being a cheap shot, considering that the builders didn't have to contend with union work rules regulation.

Management today knows what's happening, perhaps in a greater sense than it did before deregulation.

Rail labor, too, seems also to know what's happening, though it is far more reluctant to move as rapidly as it should to acknowledge the changes that have been and are taking place in the transportation marketplace.

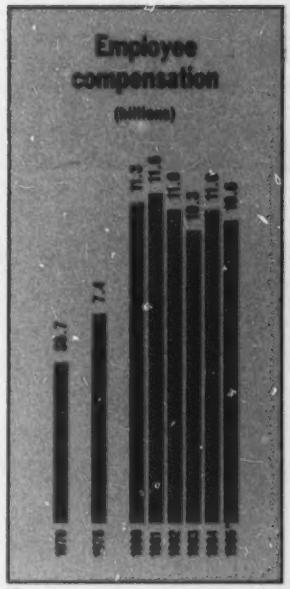
Still, there are a number of encouraging factors.

Burlington Northern has won union agreement for two-man crew operation of intermodal trains on two of its regions where opportunity is great for running short, fast piggyback trains. Other roads have won similar agreements for lesser operations.

Santa Fe made a point in running the RoadRailer test, taking a strike and letting the unions plead for legal relief.

BRAC appears to know what's going on. So does UTU at the national level. Smaller unions would seem to have to take their lead from the two big unions; now that the two major organizations have settled, it makes sense to realize that they will not take kindly to seeing thousands of their people out of work because some tiny organization balks and sets up a picket line.

It is not a perfect world, and it won't be. But it does seem that rail management and rail labor are coming to a common point—a recognition of the need for improved productivity. ■



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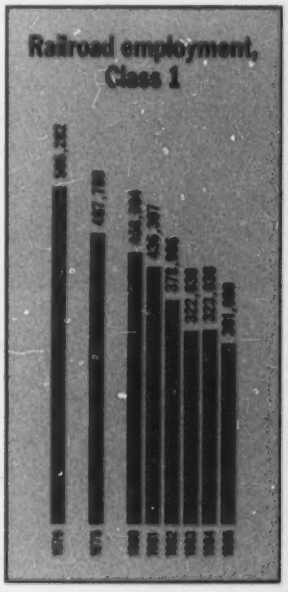


Pennsylvania's 150-mile Allegheny Railroad, ex-Conrail, is owned by Hammermill Paper Co. but its biggest customer is a refinery. Kent Patterson

Here come the short lines

The railroad map is changing fast and dramatically as Class I roads spin off lines that short-line operators can run more profitably, mainly due to a-day's-pay-for-a-day's-work rules.

By FRANK MALONE,
Associate Editor

Fostered first by bankruptcies and then by deregulation, the flow of Class I segments into small new railroads has been strong since the late 1970s. It may soon become a flood.

Set for mid-year is the biggest spinoff announced so far, 824 miles of Chicago & North Western track to be operated as the Dakota, Minnesota & Eastern. It will become the 20th newly created or expanded small railroad operating more than 100 miles of line.

These roads operate over about 6,800 miles of line (including trackage rights), which is about one-twentieth the size of the Class I network. With annual operating revenues of more than $30 million, four claim Class II status. One of the newest, Chicago Central & Pacific, expects to come within sighting distance of the $88-million Class I threshold. Far more numerous are the new carriers whose operating scope is under 100 miles.

Unlike most traditional members of the American Short Line Railroad Association, the new breed are not belt or industry switching lines. Nor are they "paper" roads owned by big carriers, shells for equipment lessors, or corporate captives limited to their owners' traffic.

By and large, they're authentic for-profit movers of freight in areas where the big carriers can no longer operate economically. Preferring to be known as regional or small railroads, many new operators shun the term "short line."

"Some of these you can't even call small railroads," says Harvey A. Levine, Association of American Railroads vice president-economics and finance. He suggests "feeder" as more fitting in many cases.

In cooperation with the American Short Line Railroad Association, the AAR is striving to compile and maintain basic data on the new carriers. Levine is leading an AAR effort to produce by late 1986 a 31-chapter tome on non-class I's. Besides identifying and describing them, the book will cover procedures for start-up; the industrial, regulatory, and economic factors of their development; and the elements that sometimes contribute to failure. The book also will analyze the 75 to 100 carriers that Levine says have come into being since the Staggers Rail Act of 1980 was passed.

Levine puts the total of non-Class-I's at well over 400 and their share of rail line operated at well over 10%. As of mid-May, ASLRA members totaled 288, most of them Class III's.

Also tracking the small roads is a man who runs one, Edward A. Lewis, general manager of the 92-mile Lamoille Valley in Vermont. He's the author of the *American Short Line Railway Guide*, published by Kalmbach and now undergoing a third revision. In May, Lewis estimated the total of all types at 420.

Estimates of total share of industry revenue run as high as 10% or close to $3 billion. This will become clearer as the AAR encourages at least the larger of the new breed to report their carloadings. AAR staff recently estimated that their carload counters were missing 3,000 to 4,000 cars a week.

• **No easy road to riches.** Reporting is not always the first concern of new operators who face start-up problems that can last two or three years. With limited traffic bases, small railroads can be deeply hurt when local business conditions deteriorate. Good examples are Farm Belt carriers.

Even when volume is strong, factors not related to business conditions can cause far greater trouble than for a Class I. One example is the flooding in northwestern California that shut down the Eureka Southern for several weeks earlier this year. Another is the insurance-rate surge that caused several Michigan carriers to suspend operations for a while in May. Further clouding the outlook is the large amount of debt incurred by some new owners.

"None of the lines in our state is making anyone rich," says a Wisconsin Transportation Department representative. Nonetheless, in relation to the number of new lines formed, relatively few have failed. "Those that have gone out of business never should have been there in the first place," says one short-line operator.

That's because many entrants were there for the wrong reasons and without the skills to confront the realities of railroading. "We've run through the railfans with no business acu-

men and we're now seeing much smarter managers," says an attorney working on line rationalization for a major carrier. A few operators' primary business will remain leasing, such as one who says: "If all our cars came home at one time we'd need seven more miles of track."

Generally, however, serious entrepreneurs with bottom-line motives are moving in, many from Class I management positions.

Sharing the motives but not the background is John E. Haley, president and 58.5% owner of Chicago Central, which late last year started operations on the former Illinois Central Gulf line between Chicago and western Iowa. Haley is a former Air Force pilot whose business experience has been in real estate. "I'm not a rail buff," he says. He also owns the Cedar Valley, another ex-ICG line in Iowa.

CC is the first of the new breed to offer dedicated intermodal service. This reflects Haley's determination that most new business will come from Interstate 80 across Iowa. He has also been chasing grain off the roads.

• **"The economics are different."** The trend toward new carriers is expected to accelerate as big railroads continue to recognize their limitations. "Because price is so volatile," says John Hall, Burlington Northern assistant vice president-marketing and planning, "we find it harder and harder to stay in touch with our smaller shippers and to respond fast enough to their needs to stay competitive with trucks. Short lines do certain things better than we do, especially in being flexible in service."

"All the major trunk lines are looking at themselves as wholesalers," says Gary E. Landrio, Allegheny Railroad general manager. "That means a dramatic change in the way the rail industry operates."

"The economics are different for short lines," says Don Byran, deputy secretary for passenger and freight service in the Pennsylvania Transportation Department, which helped to establish the Allegheny. "The short line operators are better configured to pay for the service. And their service is individualized and tailored to customers."

The main reason is freedom from costly and constrictive national labor agreements. Most new railroads have no unions. Those with unions have agreements different from those of the Class I's. They run trains with fewer crew members, most of whom are paid by the hour and many of whom perform other tasks when not moving freight.

Only a radical change in big-carrier labor conditions could squelch the rise of new carriers, most analysts of the phenomenon believe. Even with lower labor costs, big carriers might choose to specialize in high-volume movements over main corridors. The emergence of a host of small carriers could prove that, so long as deregulation prevails, a railroad can't effectively be both a line-haul carrier and gatherer/deliverer.

• **Changing the rail map.** What's shaping up, says Thomas M. Minard, a Chicago consultant helping lenders to find new-railroad opportunities, "could be the down-sizing of most Class I carriers by at least half or more of today's main-line mileage."

Beside moving freight, some new regional railroads will offer contract maintenance services at costs lower than those of big carriers, Minard says. "As the Class I's phase out ownership of rolling stock, a number of these regional railroads will become key bases for shipper and private fleet owners...In many cases, the regional railroad will replace the Class I as the originating and terminating carrier, even where lines involve considerable merchandise tonnage and unit train service."

"Short lines will proliferate and change the rail map in a very significant way," says Darius Gaskins, Burlington Northern president and chief operating officer. His company's first entry in what he sees as a major decentralization of the railroad industry will be the 139-mile Arkansas & Missouri. "This isn't the last one," a BN spokesman says. The company won't say how much more will go on the block, but outside estimates go as high as 10,000 miles.

Another big contributor will be CSX, with unconfirmed estimates running as high as 2,000 miles. The company acknowledges 450 miles so far identified as saleable to new operators, but with care. "We want the new owners to operate satisfactorily, work well with their communities, and really promote and preserve rail traffic," says Harold Snyder, CSX Transportation officer in charge of line sales.

Also boosting supply will be the Southern Pacific Santa Fe Railroad. No estimate is available for lines to be shed after merger, but Jack Edwards, SP senior vice president-marketing and sales, told ASLRA members last month that SP alone would offer up to 8,000 miles.

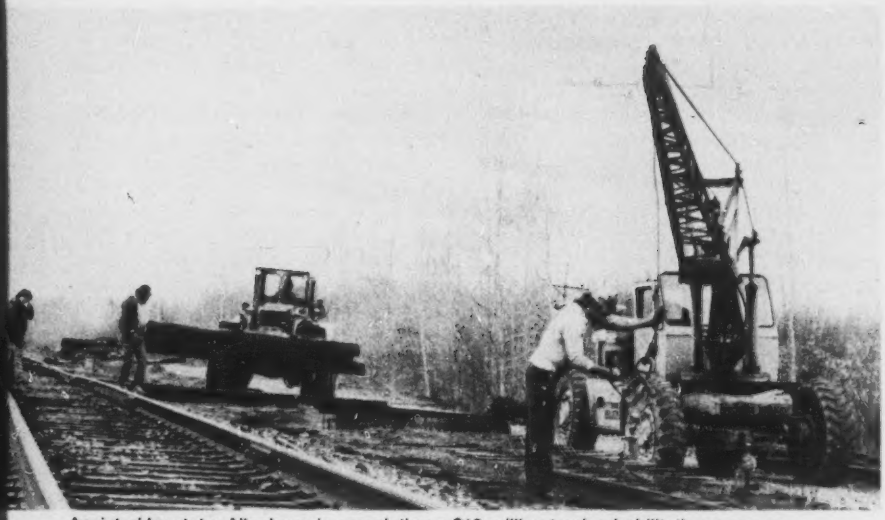
Announcing a sale that may lead to formation of the Dakota, Minnesota & Eastern by July 1, James R. Wolfe, CNW Corp. chairman, said recently: "We have other such sales under active consideration." A spokesman, however, could not provide an estimate of how many more miles C&NW wants to cast off.

One railroad with a firm figure for trackage still to be sold is Illinois Central Gulf. This former 9,200-mile railroad was down to 4,034 miles on May 6, following sale of 50.69 miles of track between Browns, Ill., and West Henderson, Ky., to the Indiana Hi-Rail Corp. for $1.95 million. About 1,000 miles remained on the block. Of the 20 new railroads with 100 miles or more of track, ICG has accounted for six. Much of the ICG trackage still for sale lies in routes linking Chicago with St. Louis and Kansas City. In May, the 91-mile Chicago, South Shore & South Bend, under new ownership since late 1984, emerged as a possible buyer. The deal would transform CSS&SB into a regional carrier 500% larger than before.

New two-man crew prepares to board Allegheny eastbound freight at North Timberland, Pa.
Kent Patterson

• **Helping the newcomers.** Bracing for the next wave of spinoffs by Class I roads are members of numerous state transportation departments. One of them is Paul C. Heitmann, director of the Wisconsin DOT's railroads and harbors bureau. He's also head of a National Conference of State Railway Officials task force on short lines. The group is building a data base that will help states to evaluate prospective operators.

"When a community is being promised ev-



Assisted by state, Allegheny is completing a $10-million track rehabilitation program.

Kent Patterson

erything, somebody has to be able to review the proposals with objectivity," says Heitmann. Updated regularly with information on revenues, carloads and maintenance, the data base would also give states better ability to anticipate problems after new owners take over. "Maybe we'll be able to do something before an operator files a Chapter Eleven application," says Heitmann. "At least, we can avoid surprises."

Wisconsin, Michigan and Illinois, among other states, have seen failures, generally rooted in near-panic reaction to perceived disaster as major carriers such as Penn Central, Rock Island, and Milwaukee Road collapsed. Aided by federal funds, some states rushed to buy lines and subsidize new, and often unqualified, operators.

As federal support has dwindled, operating subsidies have virtually disappeared. States that still own trackage hope to sell it. Most now concentrate on capital grants for track rehabilitation, largely without federal aid.

Among states hardest hit by big-road collapse was Pennsylvania, where two early new operators also collapsed. The two were not state-aided. Not one of 15 state-supported lines has failed, says Don Bryan.

"We resisted the impulse to save all the lines being abandoned, and forced local decisions to be made on the basis of viability," Bryan says. "What we have now is a program that really is the survival-of-the-fittest kind with an appropriate level of public support. And it's working."

One beneficiary is the Maryland & Pennsylvania, a 25-mile line owned by Emons Industries. The state is providing 80% of the funds for track upgrading. "Business is good and we're excited about the prospects," says Alfred P. Smith, Emons vice president-rail operations. "We're making a fair buck with a strong traffic base. We'd like to own perhaps five medium-sized railroads." Emons also owns the all-coal West Virginia Northern.

Allegheny purchased 90 new log cars from Greenville to handle owner Hammermill's traffic.

Kent Patterson

• **The Allegheny story.** Also benefiting from Pennsylvania's program is the Allegheny, which will complete a $10-million track rehabilitation by year's end. In operation since September 1985 on former Conrail trackage, the railroad offers service over 110 miles five days a week and over its other 40 miles once or twice a week.

Allegheny's owner is Hammermill Paper Co. The route reaches within 25 miles of where 80% of the wood originates to feed Hammermill's Erie pulp and paper mill. Winding through rugged northwestern Pennsylvania, the rail line was considered crucial to Hammermill's operation. The company looked at alternative shipping costs, and, says H. Leroy Weidner, corporate transportation director, "What we saw without rail access to our factory at Erie was disaster."

This is one of the few new short lines to have bought new equipment: 90 log cars built by Greenville. "They're the biggest log cars in the United States," says Gary Landrio, whose railroad experience is extensive. "There wasn't anything already available that was big enough for our needs."

Foreseeing $4 million in revenue this year, Landrio points out that Hammermill is not the biggest user. Providing more carloads is United Refinery Co. which produces various chemicals. Another important commodity is coal.

Hammermill needs the railroad, but not as a drain on finances. Thus, the carrier functions as a profit center. "They let me run the railroad," says Landrio, "and we can go after other business if it will make money for the owner."

The Allegheny has no labor agreements nor craft distinctions. The workday is eight hours. "Basically," says Landrio, "everybody is treated the same. We all have the same benefits, right from the president to the track maintainers."

• **Two-man crews, no cabooses.** Another non-union newcomer is the Iowa Interstate (IAIR), which since October 1984 has been providing service on 552 miles of former Rock Island trackage between Omaha and Chicago (including 90 miles of rights). There are two-man crews except where switching requires three men. There are no cabooses, except on the trackage-rights segment.

"We've created rates of pay, work conditions, and a benefits package that essentially treats people in quite a respectable manner," says Harry S. Meislahn, president. He formerly was ICG assistant vice president-corporate planning and development. IAIR's chairman and chief executive officer is Paul H. Banner, former Rock Island executive vice president.

Despite lower labor costs, the railroad still doesn't make money. "We predicted a sub-

New (or expanded) railroads: The top 20

	MILES OPERATED*	ESTIMATED ANNUAL REVENUE	GENERAL OFFICE	FORMER OWNER	MAJOR COMMODITY
1. Dakota, Minnesota Eastern**	980	$50M	—	CNW	Grain
2. Chicago Central & Pacific	772	$80M	Waterloo, Ia.	ICG	Grain
3. Gulf & Mississippi	713	$30M	Columbus, Miss.	ICG	Pulp, chips, paper
4. Iowa Interstate	552	$15M	Evanston, Ill.	RI	Varied
5. Tuscola & Saginaw Bay	537	$3M	Vassar, Mich.	CR/AA	Sand
6. MidSouth	474	$60M	Jackson, Miss.	ICG	Lumber, pulp, wood, paper
7. Kyle	420	$8M	Phillipsburg, KS.	RI	Grain
8. Detroit & Mackinac	400	$6M	Tawas City, Mich.	CR	Paper
9. Escanaba & Lake Superior	342	$1M-$5M	Wells, Mich.	Mil	Forest products
10. Paducah & Louisville**	309	$10M-$50M	Paducah, Ky.	ICG	Coal
11. Eureka Southern	168	$1M-$3M	Eureka, Cal.	SP	Lumber, lumber products
12. Allegheny	150	$4M	Erie, Pa.	CR	Wood, wood products, chemicals
13. Wisconsin & Southern	147	$1M-$2M	Horicon, Wis.	Mil	Canned goods
14. Iowa Northern	142	$1M-$2M	Chicago	RI	Grain
15. Minnesota Valley	141	$665,000	Morton, Minn.	CNW	Grain, kaolin
16. Arkansas & Missouri**	139	$5M	Springdale, Ark.	BN	Varied
17. Bay Colony	122	$1M-$2M	Lexington, Mass.	CR	Salt, lumber, coal
18. Maryland & Delaware	119	$1M	Federalsburg, Md.	CR	Grain
19. Indiana Rail Road	117	$5M	Indianapolis	ICG	Coal
20. Cedar Valley	107	$1M	Osage, Ia.	ICG	Grain

*Includes trackage rights **Pending

These carriers are ranked according to miles operated as of May 15. In some cases, because of trackage rights, more miles are operated than are owned. Conversely, a few carriers owning more than 100 miles are not listed because not all of their trackage was in operation. The list includes two traditional short lines that greatly expanded with acquisition of segments abandoned by other roads: Detroit & Mackinac, which doubled its size, and Escanaba & Lake Superior, which quadrupled its mileage. The 537-mile Tuscola & Saginaw Bay was a 44-mile short line when it ran its first train in 1977.

stantial deficit for the first year," says Meislahn. "We expect to break even this year and to be solidly profitable next year."

The railroad moves steel, coal, scrap, grain, lumber, food products, fertilizer, grain mill products, and piggyback merchandise. About 50% of this traffic comes from IAIR's owners, which form the Heartland Rail Corp.

Rehabilitation to raise maximum speed to 40 mph will be 70% complete by year's end. To finance this work, Heartland obtained a $6.2-million Federal Railroad Administration loan.

Largely because of new marketing efforts, IAIR is recording steady monthly increases in revenue, says Meislahn, with new business coming from customers in the railroad's territory, not from those of other railroads crossing Iowa.

Some new traffic is coming from trucks. One example is nitrogen fertilizer moving from a Kaiser Chemical plant in Illinois to destinations in Iowa and Nebraska. Other railroads share the traffic through a rate scaled to allow the commodity to go anywhere on their systems. That allows the shipper to penetrate new markets. "Kaiser had not used rail before," says Dennis E. Schaffer, IAIR marketing vice president.

Another breakthrough is IAIR's Blue Island lumber reload center on Chicago's southwest side. Stemming from a view of intermodal as more than piggyback, this "modified team track" arrangement involves rail delivery of lumber, plywood and wallboard from the Northwest and Canada, storage by IAIR, and distribution by wholesalers' trucks. The center also handles steel and bagged salt.

• **Taking traffic from I-70.** Two-man crews with nontraditional labor conditions helped to make profitable another big segment of the former Rock Island right from takeover. This is the 420-mile line between Kansas City and northeastern Colorado owned by Kyle Railways.

About half of the railroad's employees are members of the United Transportation Union but with a "non-restrictive agreement tailored to the property," says Mark Schenewerk, general manager. Last year's carloadings, 80% grain, were up nearly 15% over the previous year's.

Labor flexibility combined with grain-marketing expertise, says Schenewerk, "to determine what it would take to take this traffic off Interstate 70." By fall, the entire line will have been restored to 40-mph maximum speed. The railroad will celebrate with a Labor Day excursion.

"We think this is a growth sector of the railroad industry," says Victor Ryerson, legal counsel for Kyle Railways. "We know this business. It's kind of like setting back the clock historically and doing things that the railroads haven't been able to do for many years."

Also claiming favorable labor agreements is the MidSouth, which started operation on 418 miles of ex-ICG track in April (*RA*, May, p. 23). "If you say anything about our railroad," says Edward L. Moyers, president, "I hope that you'll say that we've enjoyed an excellent working relationship with the unions. The only reason I ask you to say that is

that it's true." MidSouth deploys three-man crews only where needed. Its non-operating work classification is flexible.

With experience on ICG and the small Peoria & Pekin Union, Moyers is bullish on the new-railroad industry. "I see these railroads as dynamic parts of the areas where they operate," he says. "They're reversing a trend of losing touch and are becoming more a part of the industrial world."

MidSouth annual revenues will be $60 million "plus," Moyers says. Commodities include lumber and wood products; pulp, paper and allied products; and chemicals. Track improvement this year will include installation of 58,000 new crossties and 100 miles of surfacing involving 50,000 tons of new ballast. Employees number about 350.

• **Wisconsin winner.** Already enjoying rebuilt track is Wisconsin & Southern, none of whose 18 employees belongs to a union. Operating 147 miles of former Milwaukee Road line, this southeastern Wisconsin carrier has entered "a pivotal year," says James J. Malloy, general manager and an experienced short liner. Major deals pending in May could cause a significant increase in traffic for a railroad that has learned how to live without aid from its owner or the state.

Because of the poor car-leasing market, parent Northbrook Corp., which also owns the Upper Merion & Plymouth in Pennsylvania, has not aided W&S since early 1983. What's more, the railroad completed a three-year track rehabilitation so efficiently that it refunded to the state $60,000 of a capital grant. Operating since 1980, W&S has never received an operating subsidy.

Currently the main commodity is canned goods, but the $1-million-revenue railroad is diversifying by seeking trans-load business from industries ten to 20 miles from its route. Some of that traffic will come from a warehouse for which ground was broken April 30. Though first-quarter traffic was weaker than first-quarter-1985's, the outlook for all of 1986 is positive. "April was the best April in our history," says Malloy.

Also surviving by diversifying is the Minnesota Valley, operator since 1983 of 141 miles of former C&NW trackage. "If we were dependent on grain like we were two years ago, we'd have problems," says Richard S. Shaw, general manager.

With two-man crews and no cabooses, MV moves fertilizer and canned goods in addition to grain. It also moves kaolin clay, of which a large deposit lies in the railroad's central Minnesota territory. This could eventually account for more than 50% of MV revenues. "Mixed traffic is the key," says Shaw, whose experience includes having helped to double the size of Michigan's Detroit & Mackinac through acquisition of Conrail trackage.

It's not always possible, however, to diversify the traffic base. It's hard especially in the very agricultural areas where branch lines have become economic burdens for big railroads. Yet those areas need good bulk transport for grain. The survival of short lines in such locales may well depend on greater public recognition of their value, says John Gohmann, Iowa Northern president.

"There is a future and a need for rail service in agriculture," Gohmann says. "It is important for preservation of the existing economic base, even in these depressionary times, and for industrial development. This is something that federal and state legislators and policy makers must take into consideration in dealing with the farm crisis and attempting to stimulate recovery."

Heeding that message are South Dakotans led by U.S. Senator Larry Pressler, who coordinated a year-long effort to preserve rail service through formation of the Dakota, Minnesota, & Eastern. "The local reaction has been tremendously positive," a Pressler aide says. Pressler is a member of the Senate Commerce, Science and Transportation Committee, which will soon hold hearings on the new railroad phenomenon.

Importantly involved in the DM&E spinoff is L.B. Foster, which will buy the trackage from C&NW, retain a yet to be determined share of ownership, and hire an operator. Foster already owns about 20% of the Gulf & Mississippi, and plans to take part in further regional carrier projects.■

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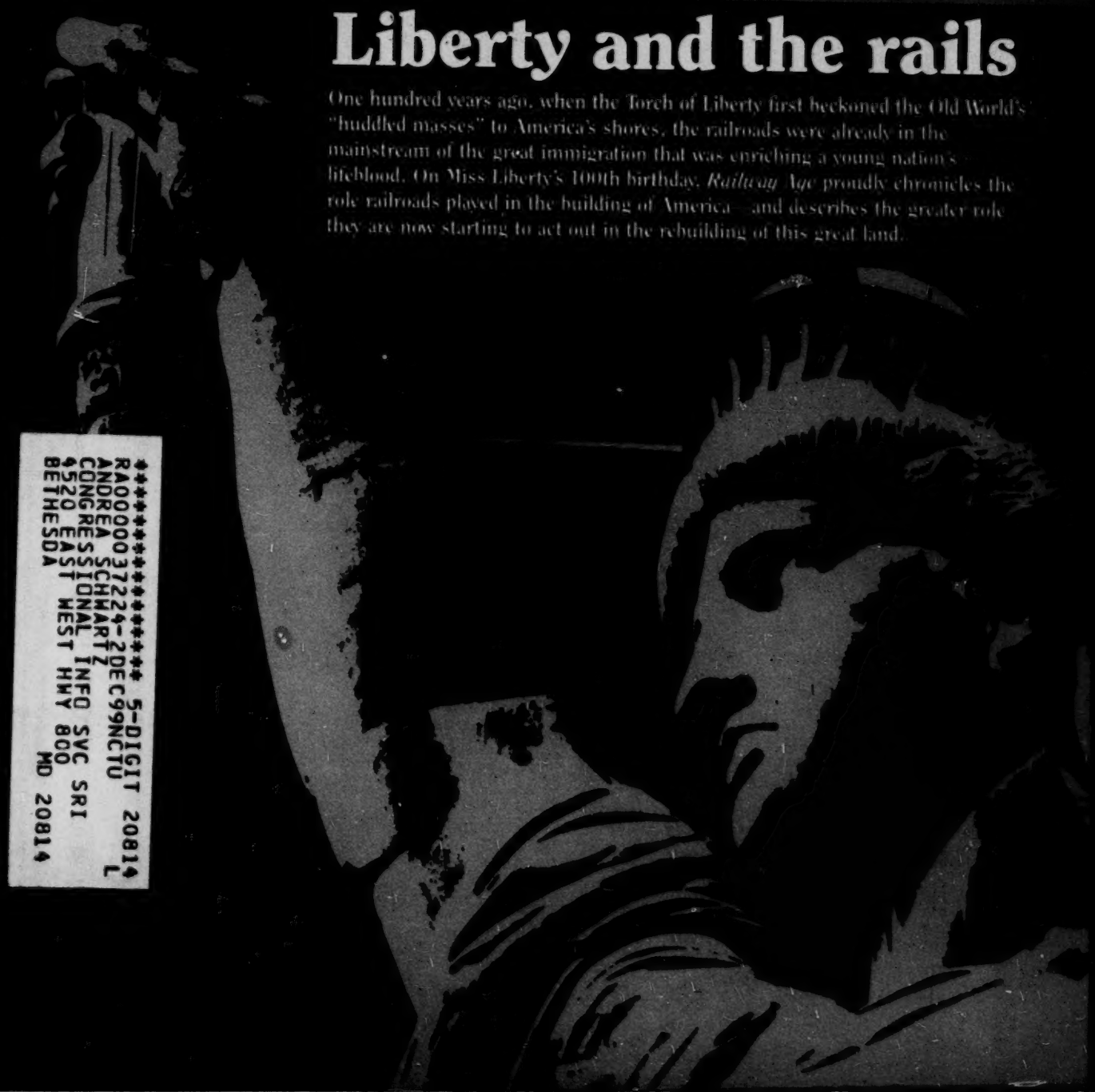
July 1986

Railway Age

...for the new age of railways

Liberty and the rails

One hundred years ago, when the Torch of Liberty first beckoned the Old World's "huddled masses" to America's shores, the railroads were already in the mainstream of the great immigration that was enriching a young nation's lifeblood. On Miss Liberty's 100th birthday, *Railway Age* proudly chronicles the role railroads played in the building of America — and describes the greater role they are now starting to act out in the rebuilding of this great land.



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Railway Age
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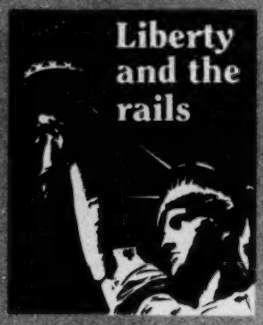

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Rate compression, which led to a disappointing first quarter, is causing railroads to take a tough new look at a broad range of cost-cutting measures.

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The railroad expects a widening stream of revenues from non-passenger activities to provide the leverage for capital projects ranging up to $150 million annually by 1990.

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Market Outlook

Equipment

Massachusetts Bay Transportation Authority: A contract has been awarded to GSI Engineering's licensee, Buckeye Steel Castings, for 33 car sets of GSI trucks to be installed on commuter cars being built for MBTA by Messerschmitt-Bolkow-Blohm, a West German firm. Similar trucks were ordered for 34 cars contracted by MBTA to MBB in 1985.

Facilities

CP Rail: Awarded a contract to Pacific Northern Rail Contractors of Langley, B. C., for the installation of 10 miles of track as part of CP's $600-million (Canadian) Rogers Pass double tracking and grade reduction project. The contract calls for insertion of 20,300 concrete and 5,900 wood ties.

CSX Transportation: Has completed the first phase of a $41-million improvement project at Corbin, Ky. A new diesel servicing facility can fuel, sand and lubricate up to eight locomotives at one time. A new diesel enginehouse is equipped with overhead cranes and access ramps to provide light repairs and scheduled maintenance for approximately 350 units to be assigned to Corbin. The second phase of the project, which is to be completed by the end of 1986, calls for construction of ten tracks to service unit coal train cars.

PATH: Awarded a $6.1-million contract to Kaiser Engineers for the first phase of reconstruction of the Exchange Place Station in Jersey City. Kaiser has been supplying pre-construction services under a prior conract. PATH also awarded a $2,087,000 contract to Prismatic Development Corp. for construction of a tunnel ventilation building in Jersey City.

Port of San Francisco: Awarded a $3-million conract to Stacey & Wilbeck, West Bay & Nationwide of San Francisco for installation of track, paving, lighting facilities and utilities at a 36-acre dock-side container yard scheduled to open Nov. 1.

Union Pacific: Ordered 2,100 Dowty retarder units for use in arrestor zones at its North Little Rock Yard. The order followed successful tests of 41 retarders installed in October 1984. The production order is to provide end of yard protection to prevent run outs.

Revenue freight carloadings

Commodity	June 7 week	May 31 week	May 24 week	May 17 week
Grain	18,440	16,930	19,786	18,434
Other farm products	4,435	3,800	4,042	4,006
Metallic ores	19,294	18,136	19,959	19,364
Coal	116,661	94,478	110,432	110,426
Crushed stone, gravel and sand	14,505	12,144	15,205	15,132
Nonmetallic minerals	9,814	9,035	9,005	9,880
Grain mill products	10,624	9,184	10,545	10,399
Food and kindred products	11,108	9,580	11,211	10,996
Primary forest products	10,343	9,113	10,467	10,073
Lumber and wood products except furniture	7,754	7,450	8,386	8,066
Pulp, paper and allied products	13,213	12,327	12,768	13,127
Chemicals and allied products	23,649	22,269	25,184	24,548
Petroleum products	4,805	4,384	4,885	4,833
Stone, clay and glass products	10,941	9,314	10,721	10,756
Coke	4,520	3,825	4,439	4,763
Metals and products	8,727	8,833	8,971	8,592
Motor vehicles and equipment	22,190	18,602	21,917	21,884
Waste and scrap materials	8,077	7,305	8,664	8,394
Forwarder and shipper assn. traffic	3,095	2,565	2,993	2,854
All other carloads	66,488	59,591	75,186	74,088
LCL traffic	94	90	90	104
Total Cars Loaded	**388,777**	**338,955**	**394,856**	**390,719**
% change from previous year	(1.7)	(2.9)	0.2	(0.1)
Estimated revenue ton-miles (billions)	17.2	15.3	17.7	17.5
% change from previous year	(2.9)	(2.2)	1.5	1.7

Total:	**1986**	**1585**	**% change**
23 weeks	389.3	390.2	(0.2)

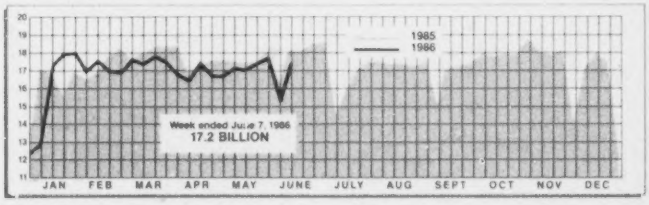
Piggyback loadings

	May 31 week	May 24 week	May 17 week	May 10 week
Trailers/containers	86,982	99,913	100,102	101,278

Cumulative total, 22 weeks		**% change from 1985**
Trailers/containers	2,154,812	16.7

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED May 1986	DELIVERED 5 months 1986	DELIVERED 5 months 1985	ORDERED May 1986	ORDERED 5 months 1986	ORDERED 5 months 1985	ON ORDER AND UNDELIVERED June 1, 1986	Average Backlog 1986	Average Backlog 1985
Built new by carbuilders	827	2,995	4,460	955	5,982	4,015	4,746	3,450	4,199
Built new in RR shops	0	0	406	0	0	0	0	0	56
Built new—total	**827**	**2,995**	**4,866**	**955**	**5,982**	**4,015**	**4,746**	**3,450**	**4,255**
Rebuilt	0	50	0	0	50	0	0	10	0
TOTAL	**827**	**3,045**	**4,866**	**955**	**6,032**	**4,015**	**4,746**	**3,460**	**4,255**
Locomotives (new and rebuilt)	44	178	193	N/A	N/A	N/A	156	183	262

Source: Transportation Div., AAR and American Railway Car Institute

REVENUES AND EXPENSES OF RAILWAYS

First quarter figures of calendar year 1986

(Dollar figures are stated in thousands, i.e., with last three digits omitted)

		Operating revenues				Operating expenses													
						Way & structures			Equipment										
		Freight	Other	Total 1986	Total 1985	Total 1986	Total 1985	1986 Deprec.	Total 1986	Total 1985	1986 Deprec.	Total 1986	Total 1985	Operating Ratio 1986	Operating Ratio 1985	Income after fixed charges 1986	Income after fixed charges 1985	1986 Net Ry. operating income	Net income 1986	Net income 1985
Amtrak	3 mos.	—	194,184	194,184	175,544	52,687	62,658	16,501	93,166	98,771	21,056	385,168	407,148	198.35	231.93	(166,144)	(225,399)	(190,984)	(166,144)	(255,399)
Atchison, Topeka & Santa Fe	3 mos.	497,757	11,349	509,106	549,104	86,112	91,542	16,277	119,720	130,711	23,482	475,211	524,364	93.34	95.49	27,569	34,293	25,899	19,340	27,569
Baltimore & Ohio	3 mos.	N/A							N/A							N/A				
Boston & Maine	3 mos.	23,079	991	24,070	28,796	3,700	4,156	442	8,734	8,999	80	25,197	28,562	104.68	99.18	(185)	917	(1,053)	(185)	917
Burlington Northern	3 mos.	944,409	22,694	967,103	1,055,596	156,760	172,156	44,253	168,968	187,681	17,309	825,440	861,847	85.35	81.64	136,365	199,042	83,525	76,221	118,703
Chesapeake & Ohio	3 mos.	N/A							N/A							N/A				
Chicago & North Western	3 mos.	186,853	25,911	212,764	204,634	39,564	40,265	6,663	49,023	49,104	3,468	202,933	207,296	95.37	101.30	3,529	(14,885)	10,154	3,779	(12,910)
Conrail	3 mos.	734,268	26,483	760,751	788,672	126,300	130,396	24,980	176,981	186,698	35,176	714,196	742,988	93.88	94.20	59,782	54,673	31,310	59,782	54,673
Delaware & Hudson	3 mos.	24,917	457	25,374	26,300	5,246	4,979	364	8,512	8,456	135	26,335	29,295	103.78	111.38	(1,742)	(3,432)	(946)	(1,742)	(3,432)
Denver & Rio Grande Western	3 mos.	74,363	1,366	75,729	85,018	12,154	14,127	3,462	14,746	15,660	3,326	66,256	76,907	87.49	90.45	8,472	9,312	6,063	4,921	5,995
Elgin, Joliet & Eastern	3 mos.	13,912	6,851	20,763	20,707	3,469	3,071	599	3,615	3,257	1,921	21,138	20,323	101.80	98.14	1,031	1,820	(736)	670	1,135
Florida East Coast	3 mos.	29,012	869	29,881	31,328	4,639	4,770	1,248	4,759	5,562	1,251	22,777	22,734	76.22	72.56	9,028	11,771	2,683	4,607	6,538
Grand Trunk Western	3 mos.	79,596	3,497	83,093	88,802	10,443	10,569	1,720	19,905	17,167	1,626	89,778	87,237	108.04	98.23	(6,477)	306	(5,532)	(5,541)	1,374
Illinois Central Gulf	3 mos.	181,933	19,828	201,761	241,860	26,257	31,877	10,441	51,979	71,556	4,472	170,307	230,021	84.41	95.10	25,654	4,864	2,388	17,515	3,525
Kansas City Southern	3 mos.	77,410	75,529	81,194	79,024	12,847	11,115	4,021	15,767	18,319	5,086	66,067	69,718	81.36	88.22	14,158	7,326	10,087	9,034	4,293
Missouri-Kansas-Texas	3 mos.	58,508	2,905	61,413	65,692	10,401	12,459	2,938	14,199	16,120	1,916	58,697	63,109	95.57	96.06	1,220	(98)	2,979	1,220	(5,898)
Missouri Pacific	3 mos.	410,037	13,356	423,393	442,676	59,777	64,900	13,636	101,143	103,154	19,537	374,097	403,755	88.35	91.20	29,178	27,188	43,116	20,609	27,627
Norfolk & Western	3 mos.	402,738	16,100	418,838	426,479	55,964	61,884	12,341	87,116	87,392	13,263	340,173	351,456	81.21	82.40	90,784	93,495	40,980	52,515	55,966
St. Louis Southwestern	3 mos.	84,524	1,401	85,925	100,405	12,517	14,920	4,863	20,963	27,684	5,232	81,737	97,485	95.12	97.09	5,855	4,401	2,439	4,106	2,733
Seaboard	3 mos.	N/A							N/A							N/A				
Soo Line	3 mos.	152,264	4,296	156,560	119,391	29,941	20,987	7,188	34,230	28,497	3,331	152,883	112,961	97.65	94.61	947	2,696	3,532	373	1,771
Southern	3 mos.	425,400	9,949	435,349	433,117	59,088	62,083	18,042	89,024	94,022	18,333	347,281	361,240	79.77	83.40	85,285	74,169	56,268	52,135	43,108
Southern Pacific	3 mos.	452,503	17,551	470,054	520,630	72,121	77,234	24,350	135,103	153,108	20,452	533,226	547,975	113.43	105.25	(34,601)	(28,229)	(59,964)	(31,792)	(26,411)
Union Pacific	3 mos.	470,683	4,911	475,594	486,777	70,083	72,233	18,301	97,894	104,552	21,924	401,424	436,185	84.40	89.60	88,120	56,645	40,720	54,629	35,965
Western Pacific	3 mos.	40,433	508	40,941	33,055	5,600	6,053	1,470	8,551	7,688	1,036	38,472	37,992	93.96	114.93	3,388	(3,458)	1,781	2,700	(406)

Source: Interstate Commerce Commission

August 1986

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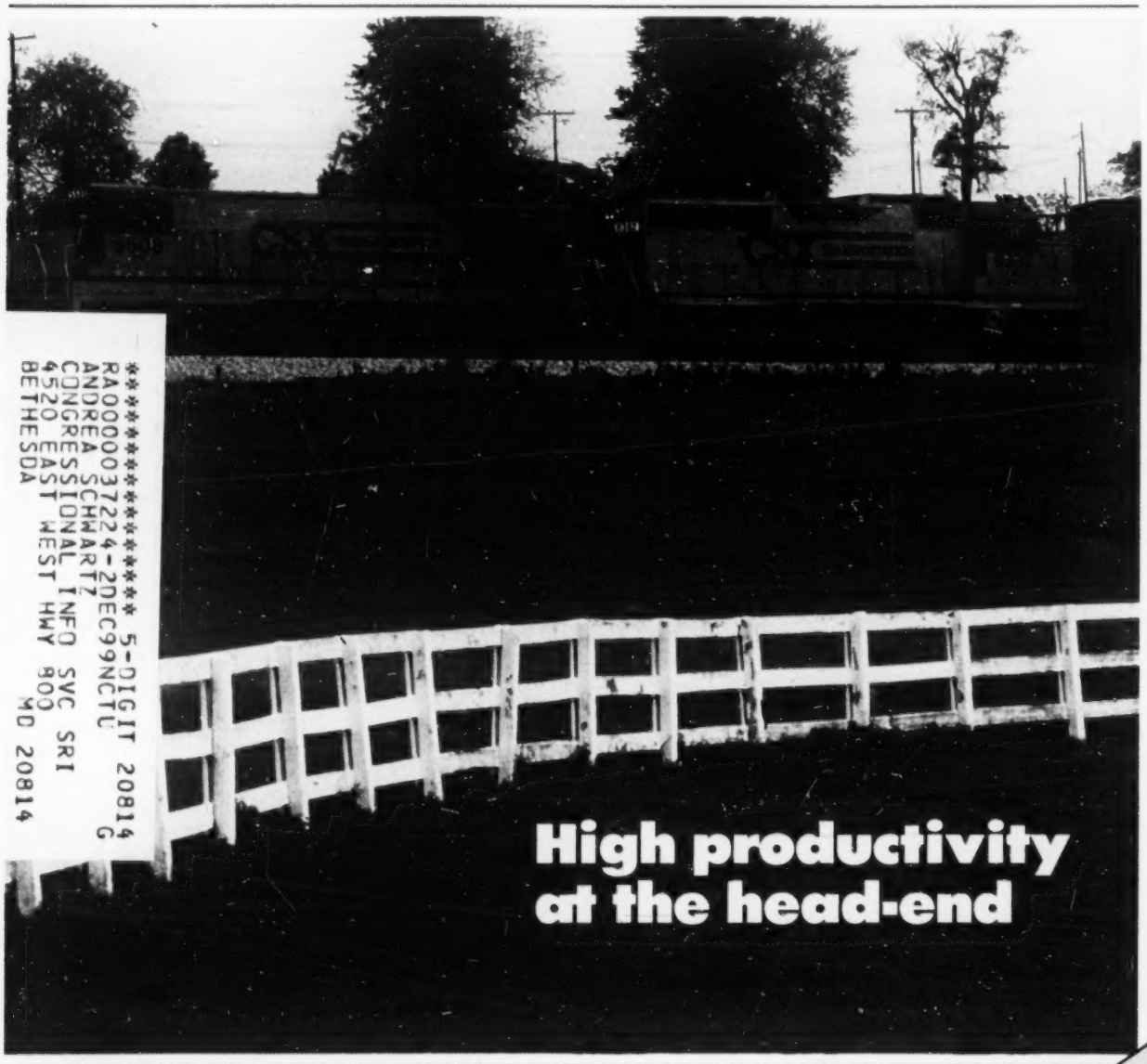

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High productivity at the head-end

Computers take on new control tasks

Bay Area: Still breaking new ground

August 1986

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The technology for dramatically improved motive power efficiency is ready and waiting—and waiting and waiting. Why?

33 High tech: How much? How soon?

A *Railway Age*/Irving Trust Co. conference concluded that railroads can afford what they need; it's a question of priorities.

36 A "second source" success story

Some railroads wanted a source of rebuilt turbos other than the OEM. Here's how an aggressive California company responded.

39 1986 Directory of car and locomotive contract repair facilities

Railway Age's annual listing cross-indexes shops by location and by company, and describes the services each can perform.

71 CAD centers multiply

In a little over a decade, the number of computer-aided dispatching centers has grown to 29, and the end is not in sight.

78 Longest tunnel takes shape

Centerpiece of an ambitious double-tracking and grade-reduction project, CP's Mount Macdonald tunnel is nearing completion.

80 "Short, fast and frequent"

A new breed of trains tailored for new traffic patterns is emerging—but all too often one of the elements is missing.

Railway Age
...for the new age of railways
High productivity at the head-end
Computers take on new control tasks
Bay Area: Rail breaking new ground

CSX photo by Steve Henderson

84 BART: Ridership down, hopes high

A combination of increased fares and overcrowded trains has driven riders away. Will a capacity-expansion help?

91 Light rail: San Jose shows the way

Santa Clara County's new 20-mile rail system, due to open in 1988, is shaping up as a showpiece of integrated mass transit.

92 "D" train scores A+ in first test

New R-68 cars supplied by Westinghouse-Amrail rolled through their initial 30-day test with no problems—a novelty for NYCTA.

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Market Outlook

Equipment

CP Rail: Placed a $5.6-million (Canadian) order with Manac Inc. of St. Georges de Beauce, Que., for 100 new temperature-controlled domestic containers. Temperature-control equipment is being supplied and installed by Carrier Transicold and Thermo King. Delivery of the order will bring CP Rail's fleet of such containers to 311 units, and its total domestic container fleet to 2,106 units. Most are 44 feet, 3 inches long, 8½ feet wide, and 9½ feet high.

GO Transit: Placed a $36.2-million (Canadian) order with the Diesel Division of General Motors of Canada Limited for the supply of 16 F59PH diesel-electric units and spare parts. Delivery is scheduled for June-August 1988. Eight of the new locomotives will replace units with which GO Transit started service in 1967; the other eight are needed for expansion of GO service on the Lakeshore and Milton lines. The F59PH was designed jointly by General Motors and GO engineers.

Facilities

Iowa Transportation Commission: Approved an $8.5-million contract for the upgrading of 63 miles of Chicago & North Western track (former Rock Island branch lines acquired by C&NW in 1983). Sharing the cost will be the Iowa DOT, 40%; the railroad, 38%; and Northwest Gathering Lines, a shippers association, 22%. Also approved was a $530,000 contract for upgrading 6.4 miles of Soo Line track, with the cost shared by the Iowa DOT, the railroad, and the Milwaukee North Line Shippers Association.

Los Angeles County Transportation Commission: Awarded a contract to STV/Seelye Stevenson Value & Knecht for a feasibility study of a proposed light rail route through the Lincoln Heights-El Sereno area of Los Angeles. Up to four alignment alternatives will be studied, with SSV&K assessing potential impacts of business relocation, property acquisition, and utility relocation.

New York City Transit Authority: General Railway Signal is the apparent low bidder on a contract valued at more than $50 million for the third part of a five-part project to modernize the signaling on NYCTA's 4th Avenue Line from DeKalb Avenue in Brooklyn to 95th Street. As prime contractor, GRS has selected L.K. Comstock & Co. to install the equipment.

Revenue freight carloadings

Commodity	July 5 week	June 28 week	June 21 week	June 14 week
Grain	21,476	27,273	27,849	25,449
Other farm products	3,565	4,240	4,133	4,213
Metallic ores	15,744	15,468	15,095	17,654
Coal	76,601	115,220	115,422	113,462
Crushed stone, gravel and sand	10,882	14,294	13,866	14,216
Nonmetallic minerals	8,284	9,306	9,288	8,895
Grain mill products	9,156	10,545	10,751	10,759
Food and kindred products	9,481	11,421	10,883	10,922
Primary forest products	7,764	10,517	10,748	10,470
Lumber and wood products except furniture	5,783	8,379	8,324	7,829
Pulp, paper and allied products	11,845	13,163	12,862	12,381
Chemicals and allied products	19,876	22,678	22,253	22,314
Petroleum products	4,059	4,951	4,844	4,900
Stone, clay and glass products	8,696	10,227	10,493	10,466
Coke	3,689	3,968	4,515	4,287
Metals and products	7,499	7,957	7,613	7,609
Motor vehicles and equipment	14,396	21,419	21,790	22,205
Waste and scrap materials	6,009	8,207	8,083	8,356
Forwarder and shipper assn. traffic	2,670	3,484	2,958	3,129
All other carloads	57,119	68,411	66,946	66,126
LCL traffic	109	113	111	99
Total Cars Loaded	**304,703**	**391,241**	**388,867**	**385,741**
% change from previous year	1.0	(2.1)	(3.0)	(1.8)
Estimated revenue ton-miles (billions)	14.0	17.4	17.4	17.2
% change from previous year	(0.7)	(0.6)	(3.5)	(2.4)

Total:	1986	1985	% change
27 weeks	453.7	457.5	(0.8)

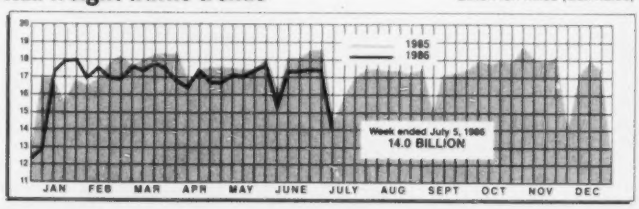
Piggyback loadings

	June 28 week	June 21 week	June 14 week	June 7 week
Trailers/containers	97,745	96,940	96,165	94,387

Cumulative total, 26 weeks		% change from 1985
Trailers/containers	2,429,013	9.8

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED June 1986	DELIVERED 6 months 1986	DELIVERED 6 months 1985	ORDERED June 1986	ORDERED 6 months 1986	ORDERED 6 months 1985	ON ORDER AND UNDELIVERED July 1, 1986	Average Backlog 1986	Average Backlog 1985
Built new by carbuilders	999	3,994	5,537	485	6,467	4,842	4,232	3,581	4,139
Built new in RR shops	0	0	406	0	0	0	0	0	47
Built new—total	**999**	**3,994**	**5,943**	**485**	**6,467**	**4,842**	**4,232**	**3,581**	**4,186**
Rebuilt	0	50	0	25	75	0	25	12	0
TOTAL	**999**	**4,044**	**5,943**	**510**	**6,542**	**4,842**	**4,257**	**3,593**	**4,186**
Locomotives (new and rebuilt)	21	199	212	N/A	N/A	N/A	144	177	263

Source: Transportation Div., AAR and American Railway Car Institute

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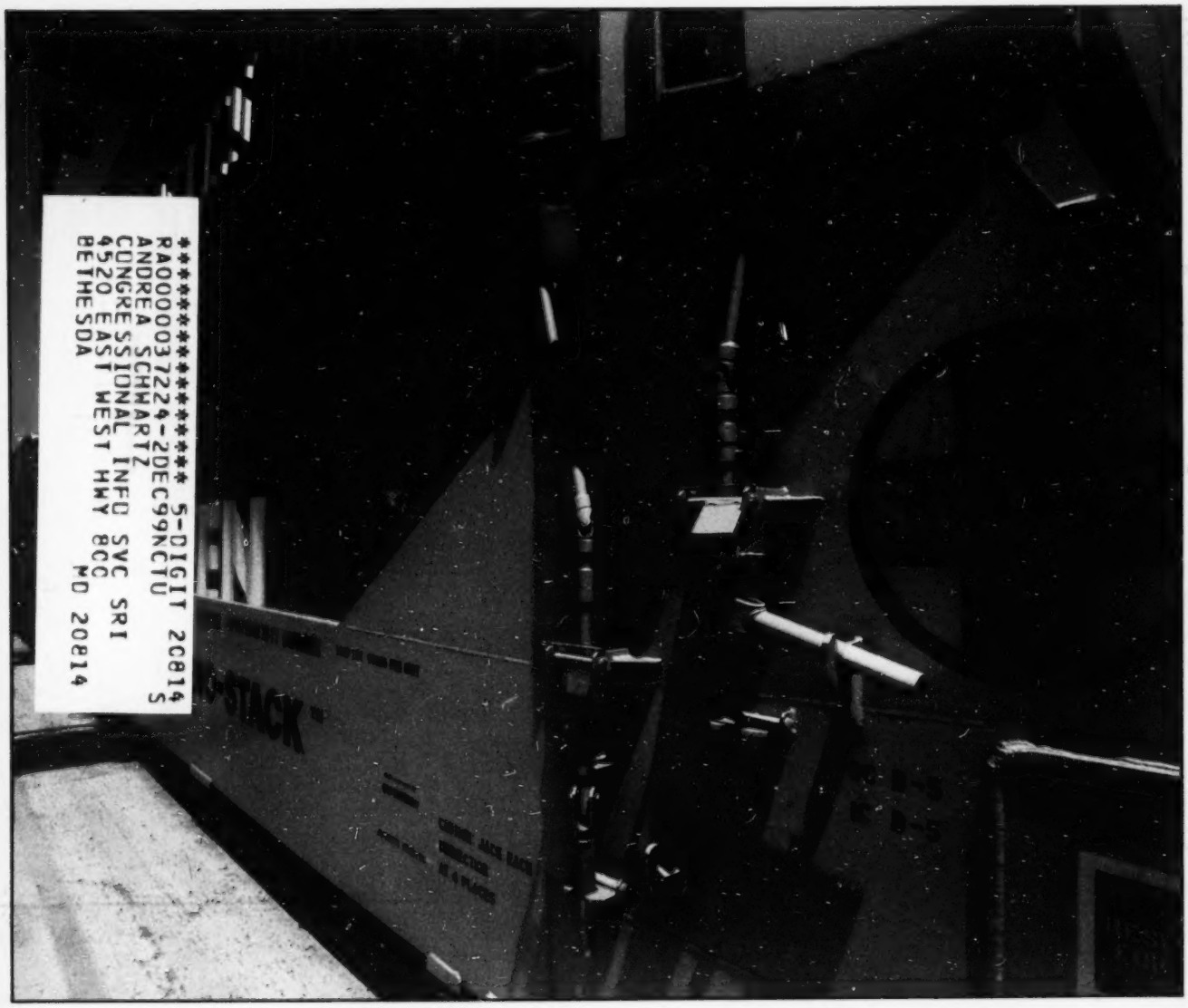
September 1986

Railway Age

...for the new age of railways



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The payoff in new equipment

M/W cost-cutters

Portland: A new jewel in light rail's crown

September 1986

Railway Age

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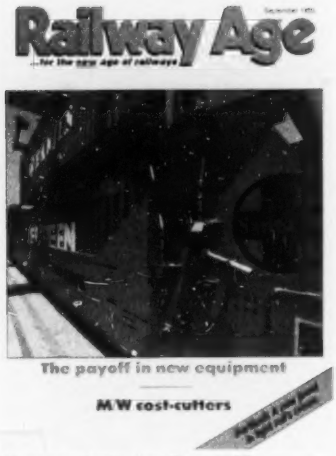

Cover photo by Bruce Harmon of Gunderson, Inc.

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Tri-Met's first revenue trains weren't scheduled to run until this month—but long before that the new light rail line was spurring economic development.

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Market Outlook

Facilities

Massachusetts Bay Transportation Authority: Union Switch & Signal Division of American Standard is the apparent low bidder for upgrading signaling on MBTA's Attleboro-to-Hyannis commuter railroad, 81 miles. Boston-based Massachusetts Electric will be electrical contractor for the project, which calls for design and installation of wayside signaling equipment and enhancing of 70 grade-crossing protection systems.

Metra: The commuter rail arm of Chicago's Regional Transportation Authority awarded an $18.4-million contract to Klein Construction Co., Westmont, Ill., for new car and locomotive shops and a new material storehouse at 14th Street yard south of Chicago Union Station. Work will be completed in mid-1988 as part of a capital program eventually totaling $200 million and including four other downtown yards.

Metro-North Commuter Railroad: Placed a $2.7-million order with the Farinon Division of Harris Corp. for the supply and installation of an optical fiber communications transmission network along the right-of-way of the Harlem, Hudson and New Haven lines. It will provide telephone communications facilities, centralized traffic control, dispatch, supervisory control/data acquisition for traction power, public address, and miscellaneous other data communications circuits. The project is to be completed in July 1987.

- Metro-North begins work this month on the $16-million rehabilitation of four drawbridges—the Cob, Walk, Saga, and Devon—which span the Mianus, Norfolk, Saugatuck, and Housatonic rivers on the New Haven line. The construction contract was awarded to Arnold M. Diamond Inc. of Great Neck, N.Y.

Southern Pacific Transportation Co.: Awarded a contract to In-Terminal Services Co. to handle the loading and unloading of containers at the new $50-million Los Angeles-Long Beach Intermodal Container Transfer Facility scheduled to open in November. A subsidiary of Mi-Jack Corp., In-Terminal Services operates intermodal facilities at Bakersfield, Chicago, Dallas, Denver, Ft. Worth, Fresno, Houston, Oklahoma City, Phoenix, and Savannah.

Revenue freight carloadings

Commodity	August 9 week	August 2 week	July 26 week	July 19 week
Grain	25,186	24,246	26,775	25,518
Other farm products	3,121	2,710	2,862	3,457
Metallic ores	14,810	15,668	17,680	15,550
Coal	112,870	112,846	112,163	102,096
Crushed stone, gravel and sand	14,429	15,206	14,173	15,048
Nonmetallic minerals	8,810	7,295	8,178	9,063
Grain mill products	10,478	10,425	10,274	10,231
Food and kindred products	10,824	11,203	10,645	10,883
Primary forest products	9,839	10,147	10,242	10,279
Lumber and wood products except furniture	7,170	8,363	8,043	7,522
Pulp, paper and allied products	12,663	12,595	12,147	12,042
Chemicals and allied products	21,975	22,962	22,411	23,175
Petroleum products	5,208	4,960	4,897	4,910
Stone, clay and glass products	10,382	10,500	10,314	10,363
Coke	3,367	3,281	3,745	4,366
Metals and products	7,106	9,074	8,809	8,607
Motor vehicles and equipment	14,874	15,579	17,536	17,852
Waste and scrap materials	7,449	7,281	7,895	7,622
Forwarder and shipper assn. traffic	3,238	3,196	2,991	3,094
All other carloads	68,437	70,132	68,549	64,647
LCL traffic	87	109	101	104
Total Cars Loaded	**372,323**	**377,778**	**380,430**	**366,429**
% change from previous year	(1.7)	(1.2)	(1.3)	(0.9)
Estimated revenue ton-miles (billions)	17.1	17.2	17.3	16.7
% change from previous year	(1.1)	(0.9)	(0.7)	(1.3)

Total:	1986	1985	% change
32 weeks	537.6	542.3	(0.9)

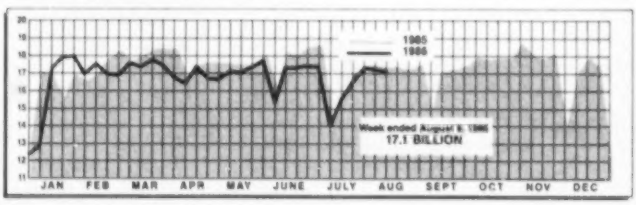
Piggyback loadings

	August 2 week	July 26 week	July 19 week	July 12 week
Trailers/containers	99,664	96,308	93,863	94,005

Cumulative total, 31 weeks		% change from 1985
Trailers/containers	2,895,012	9.8

Rail freight traffic trends

Billion ton-miles (Estimated)



Source: Association of American Railroads

Freight cars

	DELIVERED July 1986	DELIVERED 7 months 1986	DELIVERED 7 months 1985	ORDERED July 1986	ORDERED 7 months 1986	ORDERED 7 months 1985	ON ORDER AND UNDELIVERED Aug. 1, 1986	Average Backlog 1986	Average Backlog 1985
Built new by carbuilders	1,247	5,241	6,612	797	7,264	5,932	3,782	3,610	4,100
Built new in RR shops	0	0	406	0	0	0	0	0	40
Built new—total	**1,247**	**5,241**	**7,018**	**797**	**7,264**	**5,932**	**3,782**	**3,610**	**4,140**
Rebuilt	0	50	0	0	75	0	25	14	0
TOTAL	**1,247**	**5,291**	**7,018**	**797**	**7,339**	**5,932**	**3,807**	**3,624**	**4,140**
Locomotives (new and rebuilt)	25	224	250	N/A	N/A	N/A	127	170	264

Source: Transportation Div., AAR and American Railway Car Institute